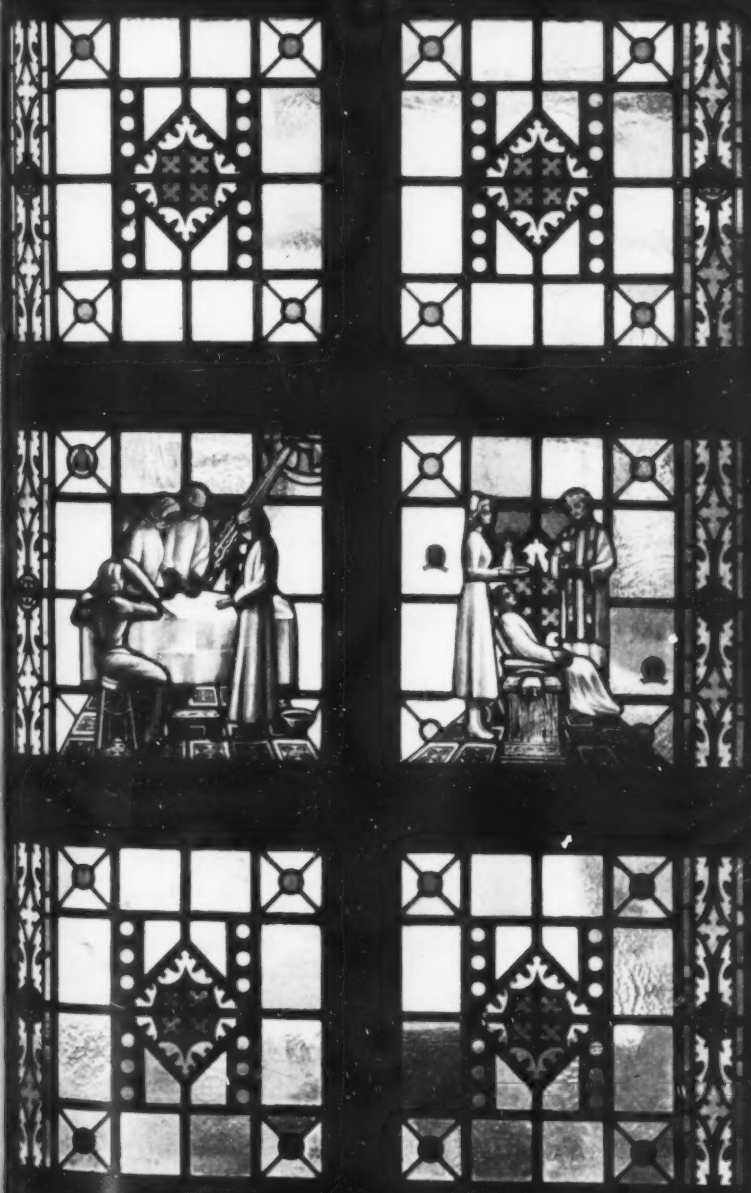
Hospital Topics

TODAY'S HOSPITAL PRACTICES

DECEMBER 1960



Outpatient Pastoral Counseling
page 36

The Predetermined Cost
page 41

Disaster Planning for the CSR
page 97

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References: 1. Sadove, M. S.: A preliminary report on Carbocaine, a new local anesthetic. Submitted for publication. 2. Luduena, F. P.; Hoppe, J. O.; Coulston, F., and Drobeck, H. P.: The pharmacology and toxicology of mepivacaine, a new local anesthetic, *Toxicol. & Appl. Pharmacol.* To be published. 3. Rovenstine, E. A.: Personal communication. 4. Young, J. A.: Upper arm block with Carbocaine (mepivacaine), a new anesthetic agent, *Anesth. & Analg.* To be published. 5. Griesser, Gerd: Erfahrungen mit einem neuen Lokalanestheticum, *Anaesthesist* 6:364, Oct., 1957.

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DECEMBER, 1960, VOL. 38, NO. 12

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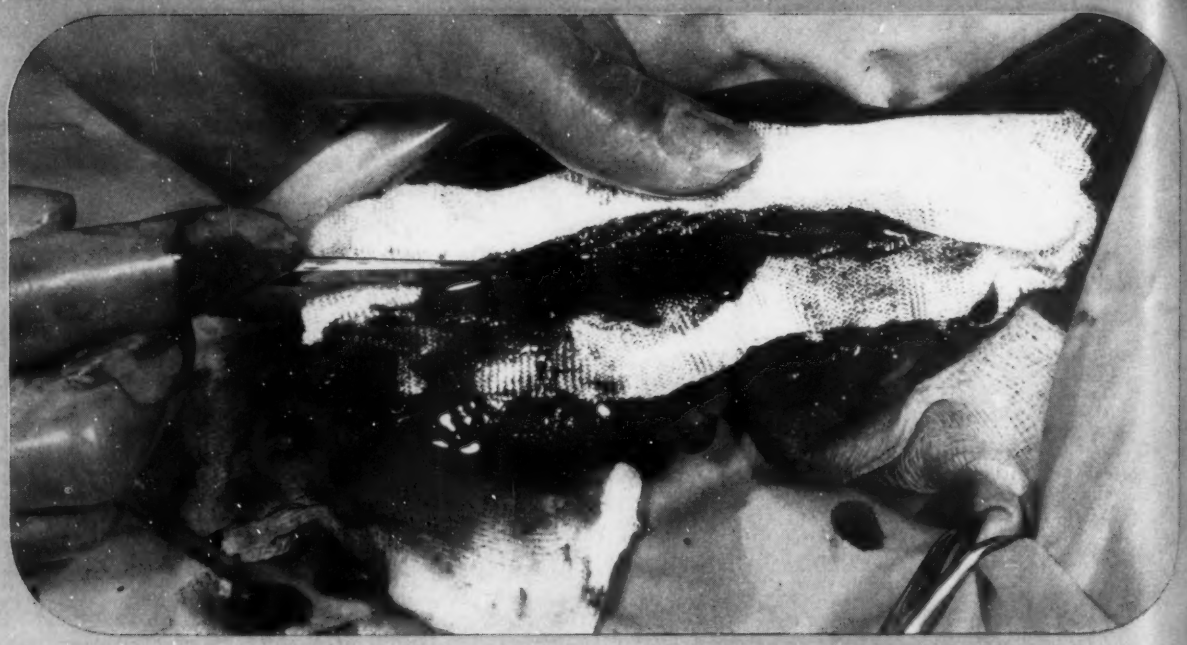

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"FRACTURES: AN INTRODUCTION"—As the title suggests this full color and sound film is designed to illustrate the elementals of pathology, repair and management of fractures. The general principles and methods of reduction are covered in detail. Explanations are simplified by integration of animated anatomical drawings and live action photography. Produced for the American College of Surgeons.
Running time: 27 minutes (16 mm.)

"HOSPITAL SEPSIS: *A Communicable Disease"* – In full color and sound, this film deals with the incidence, causes and prevention of hospital infections. Its popularity as a teaching film is demonstrated by the fact that 550 prints are in circulation throughout the world. Prepared under the auspices of the American Medical Association, the American College of Surgeons and the American Hospital Association.
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THIS MONTH IN HOSPITAL Topics

- If the snow lies thick outside your windows, or even if it's just a cold wind blowing, you may think this an unusual time of year for an article on air-conditioning. But it isn't at all, says our author William J. Wren — this is the time for a thorough checkup of your air-conditioning equipment. See story on p. 43.

- This month marks the final installment of Edward P. Robinson's series on "Determining Nursing Staffing Patterns in an Intensive Care Unit." Part III of this first-prize winning article in TOPICS' editorial competition deals with interpretations of the study discussed in the first two articles, plus recommendations and conclusions. (P. 47.)

- A real dilemma faces the modern hospital chaplain when he is requested to counsel those people not hospitalized, say Richard K. Young and Albert L. Meiburg, of the department of pastoral care, North Carolina Baptist Hospitals, Inc. The answer — and it is one of value to both hospital and community — is the creation of an outpatient pastoral counseling service. On p. 36 the authors tell how their hospital outpatient counseling functions, and discuss some of the useful work it has accomplished.

  And Chaplain John H. Brennecke explores another aspect of the hospital chaplaincy — public relations: the chaplain's role and duties on p. 39.

- In obtaining statistical and financial data for improving managerial efficiency, the technic of the predetermined cost is most valuable. Alfred R. Kurtz explains the method used in employing this technic and delineates the advantages involved, on p. 41.

- Two of the latest developments in the hospital field are explored in this month's TOPICS. A new disposable isolator—plastic, lightweight, flexible — is discussed on p. 87. And on p. 34 is Dr. Hugh McGuire's vision of the future: the Atomedic hospital which links medicine, electronics, and automation in a small hospital that will perhaps revolutionize medicine.

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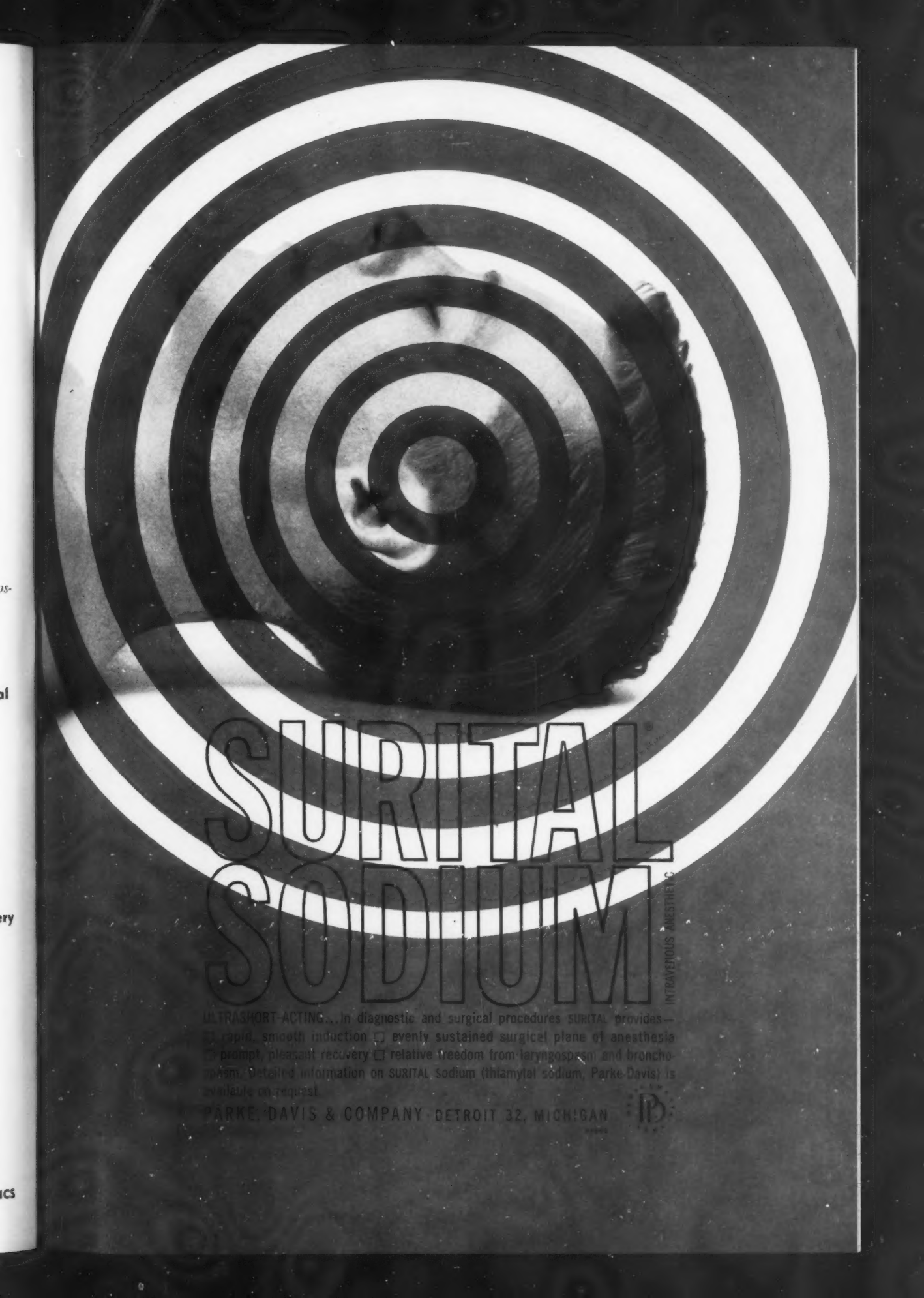
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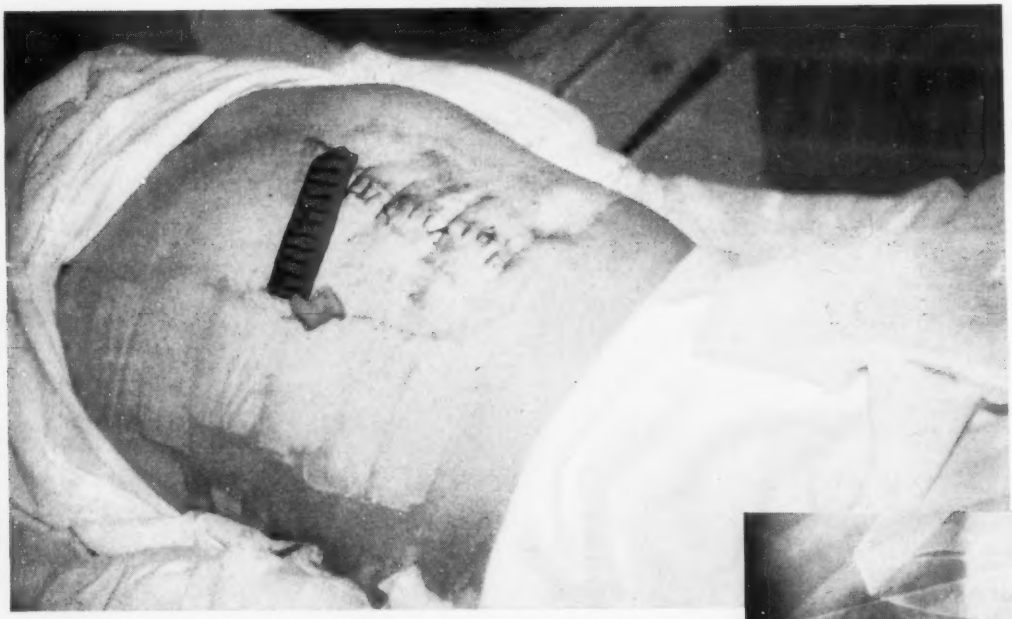

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HOSPITAL Topics
The News Magazine for the Hospital Staff

DECEMBER, 1960
VOL. 38, NO. 12

Scanning the News

Perfume a Knockout For Germs, Too

The lady wearing perfume is protecting herself – from germs.

Perfume oils have been found to kill bacteria and fungi, both for the person who wears perfume and the one who inhales it, according to Dr. Jasper C. Maruzzella, associate professor of biology, Long Island University.

Dr. Maruzzella and his team of scientists tested 100 perfume oils over a three-year period, both in liquid and vapor forms. Of the 100 tested, 75 or more were found to have varying degrees of effectiveness in killing bacteria and fungi. The oils tested are those used in the manufacture of virtually all commercial perfumes.

Dr. Maruzzella believes the findings may have important medical uses. Adding perfume oils to medications applied externally, such as ointments, might give the body a certain degree of protection. Another use for the oils would be in medications applied in the vaporous state.

The scientists also suggest that adding perfume oils to preparations used to alleviate athlete's foot might increase their effectiveness, and would certainly enhance the odor of the product.

This artists' conception shows the proposed Temple University Medical Research Building, now under construction at Philadelphia. The building will be windowless, and interior partitions will be movable to provide maximum wall and floor space. Research areas laid out in 4x4-ft. grids will enable scientists to change any room to any size in multiples of four, up to 44 ft. Air-conditioned throughout, the windowless design also simplifies control of environmental conditions for projects requiring this feature.

Device Tracks, Records Wandering Eye

The wandering eye – and resulting wandering attention – can be tracked by a new device developed by Drs. Edward Llewellyn-Thomas and Norman H. Mackworth, Toronto.

The equipment, according to its developers, will provide science with an exact record of what the eyes are focused on, rather than merely where the head is pointed.

The device consists of an eight-millimeter motion picture camera mounted on a helmet. The camera records where the head is pointed. A periscope hanging down in front of the left eye has a tiny light bulb that reflects off the cornea as the eye moves. This imposes an "eye-marker" spot light on the motion picture record that tells exactly where the subject's line of sight is aimed.

Thus, the apparatus cannot be tricked by pointing the head in the general direction in which attention is desired – it is also necessary to focus the eye.

The two Canadian scientists predict wide application for their device. A record of exactly where the eye fastens on a full color advertisement could be obtained. The machine could be used in improving the eye habits of children who squint.

Studies of automobile drivers' vision, the observation of instrument panels, and other actions in which visual attention is essential are now being conducted.

Wringers Hand Junior A Crushing Blow

The power-driven wringer on

(*Continued on page* 62)

THE SUCCESSOR TO ORDINARY ADHESIVE TAPE

TOTALLY NEW COMFORT FOR THE PATIENT
—lighter, cooler, physiologically inert, free from usual irritation and maceration

...ENDS PROBLEM OF PAINFUL REMOVAL
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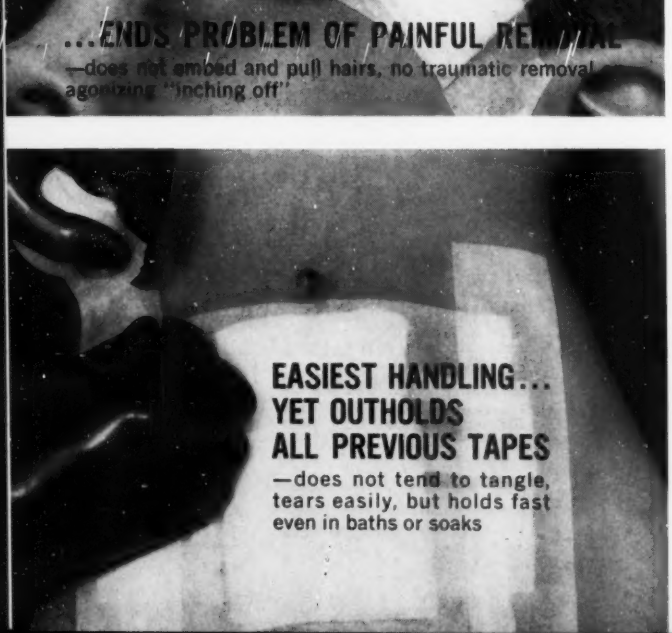

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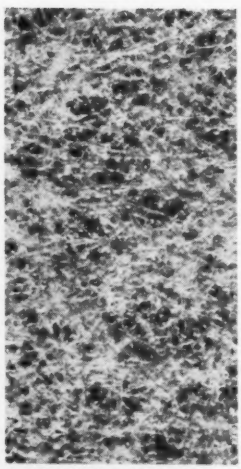

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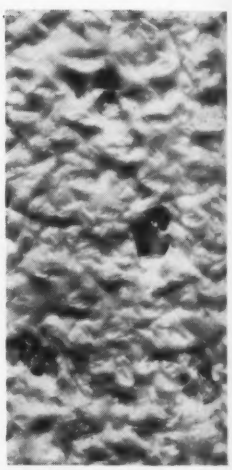

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News Briefs at Press Time

TAX COURT CONSIDERS INTERN EMPLOYEE, NOT STUDENT

U. S. Tax Court last month rejected the common assumption that an intern in an accredited hospital is a full-time student at an educational institution. It upheld Internal Revenue commissioner's refusal of an Alabama couple's claim of dependency credit for part of period when their son was an intern at Jackson Memorial Hospital, Miami, Fla.

In upholding disallowance of the claim, court said that intern training comes closer to being employee instruction, or on-the-job training, than curricular education, and that in its opinion the role of a salaried intern is more one of an employee than a student.

SPECIAL CONFERENCE SCHEDULED ON PROBLEM OF FOREIGN PHYSICIANS

A special meeting to discuss all aspects of the problem of foreign medical-school graduates in U.S. hospitals has been called by the AMA Council on Medical Education and Hospitals. It will be held in Washington December 8 and 9.

State Department and Department of HEW are concerned about the effect which the wholesale discharge of foreign graduates would have on U.S. relations with other countries.

GENERAL HEALTH RECOMMENDATIONS GIVEN IN REPORT OF PRESIDENTIAL COMMISSION

Section of health and medical services of the final report of President's Commission on National Goals, released in late November, contains general rather than specific recommendations. Among them:

Hill-Burton hospital construction aid should be extended to other medical facilities; governmental and private support "is necessary for training doctors"; further efforts are needed to reduce the burden of the cost of medical care; "extension of medical insurance is necessary through both public and private agencies."

LATEST DEVELOPMENTS IN NEW PROGRAM FOR CARE OF AGED

Implementation of the Kerr-Mills bill for support of aid to the medically indigent has been given top priority by AHA in its 1960-61 program.

HEW Secretary Flemming, undiscouraged by apparent unwillingness of most states to take part in the program, believes that there will be more interest in it after new governors are installed and the legislatures meet in 1961. He predicts that before the end of 1963 practically all of the states will have authorized participation and matching of federal funds.

Association of State and Territorial Health Officers, at recent meeting in San Francisco, adopted a resolution asking amendment of federal social security laws to allow states to decide whether their welfare or health departments are to administer medical-care programs for the aged. Kerr-Mills bill specifies that welfare departments shall administer medical benefits rendered to persons on public assistance rolls.

ASTHO further recommends administrative separation between medicol benefits for aged persons getting public assistance and those who are medically indigent.

HOSPITAL WINS COURT APPROVAL TO FILE TAX RETURNS ON CASH BASIS

A hospital may file its tax returns on a cash receipts and disbursements basis while retaining the accrual method of keeping its books and records for other than tax purposes, the U. S. Tax Court decided recently when it ruled in favor of appeal by St. Luke's Hospital, proprietary institution in Bluefield, W. Va.

Because it had so many bad debts and uncollectible accounts, hospital had obtained permission from Internal Revenue Service to change from accrual to cash system. Commissioner of Internal Revenue said it failed to comply with conditions which accompanied the permission, and placed deficiency claims totaling $133,000. The hospital appealed to the Tax Court.

BRIEF BRIEFS

—A marked increase in outlays for new hospital and institutional construction is predicted for 1961 by the Department of Commerce. Estimated value of privately sponsored projects in this field was $570 million in 1959 and $575 million in 1960. Total of $625 million is forecast for 1961. A smaller increase is expected for public hospitals and institutions.

—Infant mortality rate in U.S. dropped 7.2 percent between 1950 and 1968 — from 29.2 to 27.1 deaths under one year per 1,000 live births. Nine countries had more favorable rates.

—As of September 30, 1960, 5,246 Hill-Burton projects had been approved since beginning of program. Total estimated cost is $4.5 billion, of which federal share is $1.4 billion. Major projects approved in September included a 100-bed nursing home in North Dakota and a 60-bed nursing home in Wisconsin.

—Kefauver committee may hold public hearings on practices and policies of health-insurance underwriters early in 1961 session of Congress.

—Season's greetings from the TOPICS staff. Our Christmas cover shows a scene from the stained-glass windows in the chapel of Augustana Hospital, Chicago.

Gordon M. Marshall

Calendar of Meetings

DECEMBER

1- 2 Florida Hospital Association, Everglades Hotel, Miami, Fla.

1- 2 Illinois Hospital Association, Pick-Congress Hotel, Chicago

1- 2 Conference on Graduate Medical Education, University of Pennsylvania Graduate School of Medicine, Philadelphia

2- 3 Regional Institute on OR Nursing, Association of Operating Room Nurses National Committee on Education, Miami Beach, Fla.

3- 8 American Academy of Dermatology and Syphilology, Palmer House, Chicago

4- 9 Radiological Society of North America, Netherland-Hilton Hotel, Cincinnati, O.

5- 7 AHA Institute, Advanced Hospital Purchasing, Bellevue Hotel, San Francisco

5- 7 AHA Institute, Advanced, Medical Record Librarians, AHA Headquarters, Chicago

5- 8 AHA Institute, Nursing Service Supervision, Hotel Roanoke, Roanoke

8 Society of Biological Psychiatry, Hotel Roosevelt, New York City

9 American Rheumatism Association, Sheraton Dallas Hotel, Dallas, Texas

10-11 Academy of Psychoanalysis, Hotel Biltmore, New York City

12-14 AHA Institute, Labor Relations, AHA Headquarters, Chicago

12-15 AHA Institute, Hospital Design and Construction, Park-Sheraton Hotel, Washington, D.C.

26-31 American Association for the Advancement of Science, Philadelphia, Pa.

1961 MEETINGS

JANUARY

8 Puerto Rico Hospital Association, Medical Association Bldg., Santurce

8-13 American Academy of Orthopaedic Surgeons, Hotel Americana, Bal Harbour, Miami Beach, Fla.

9-12 White House Conference on Aging, Washington, D.C.

16-18 American College of Surgeons, Sectional Meeting, Hotel Dinkler-Tutwiler, Birmingham, Ala.

19-20 Alabama Hospital Association, Whitley Hotel, Montgomery

23-24 National Association of Private Psychiatric Hospitals, Safari Hotel, Scottsdale, Ariz.

23-26 American College of Surgeons, Sectional Meeting, Hotels Del Prado, Reforma, Vista Hermosa, El Presidente, Alffer, Continental Hilton, Mexico City

30-Feb. 3 American Protestant Hospital Association, Muehlebach Hotel, Kansas City

30-Feb. 3 Clinical Congress of Abdominal Surgeons, Hotel Americana, Bal Harbour, Miami Beach, Fla.

FEBRUARY

1- 2 American Hospital Association, Midyear Conference of Presidents and Secretaries, AHA Headquarters, Chicago

2- 4 American College of Hospital Administrators, Fourth Annual Congress on Administration, Morrison Hotel, Chicago

4- 7 American Medical Association, Congress on Medical Education and Licensure, Palmer House, Chicago

6- 8 American Academy of Allergy, Statler-Hilton Hotel, Washington, D.C.

8-10 American Academy of Occupational Medicine, Statler Hotel, Detroit

(*Continued on page 14*)

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For further information see postcard opposite page 134.

CALENDAR OF MEETINGS

(*Continued from page 12*)

8-10 Illinois Congress for Maternal and Infant Health, St. Nicholas Hotel, Springfield, Ill.

8-11 American College of Radiology, Drake Hotel, Chicago

9-11 Society of University Surgeons, University of Kansas Medical School, Kansas City

13-15 Association of Operating Room Nurses, Civic Auditorium, San Francisco, Calif.

14-17 American Nurses' Association, Section Regional Conference, Hotel New Yorker, New York City

16-18 Central Surgical Association, Park Plaza Hotel, St. Louis

23-25 Louisiana Hospital Association, Captain Shreve Hotel, Shreveport

23-25 American Academy of Forensic Sciences, Drake Hotel, Chicago

28-Mar. 3 American Nurses' Association, Sectional Meeting, Memorial Coliseum, Portland, Oregon

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MARCH

3-16 National Health Council, National Health Forum, Waldorf-Astoria Hotel, New York City

5- 8 American Nurses' Association, Section Regional Conference, Hotel Denver-Hilton, Denver, Colo.

6- 9 American College of Surgeons, Sectional Meeting for Surgeons and Nurses, Hotels Bellevue-Stratford, Ben Franklin, and Sylvania, Philadelphia

8-11 Neurosurgical Society of America, Boca Raton, Fla.

12-17 American College of Allergists, Statler Hilton Hotel, Dallas, Tex.

15-18 American Nurses' Association, Section Regional Conference, Hotel Chase-Park Plaza, St. Louis, Mo.

16 Wisconsin Hospital Association, Schroeder Hotel, Milwaukee

20-24 American Surgical Association, Boca Raton Hotel, Boca Raton, Fla.

21-23 Kentucky Hospital Association, Phoenix Hotel, Lexington

23-24 Georgia Hospital Association, Biltmore Hotel, Atlanta

23-25 American Orthopsychiatric Association, Statler Hilton Hotel, New York City

27-29 New England Hospital Assembly, Hotel Statler, Boston

APRIL

3- 6 Ohio Hospital Association, Veterans Memorial Building, Columbus

6- 8 American College of Surgeons, Sectional Meeting, Fort Garry Hotel, Winnipeg, Manitoba, Canada

9-13 International Anesthesia Research Society, Houston, Texas

10-12 American Academy of Pediatrics, Spring Meeting, Sheraton Park Hotel, Washington, D.C.

10-13 Southwestern Surgical Congress, St. Louis, Mo.

10-14 American Society for Experimental Pathology, Atlantic City

10-14 American Physiological Society, Atlantic City

10-14 American Society of Biological Chemists, Atlantic City

10-14 National League for Nursing, Cleveland

11-13 Industrial Medical Association, Biltmore Hotel, Los Angeles

13-14 Carolinas-Virginias Hospital Conference, Roanoke Hotel, Roanoke, Va.

13-15 American Association of Railway Surgeons, Drake Hotel, Chicago

13-20 American Academy of General Practice, Miami Beach, Fla.

19-21 Southeastern Hospital Conference, Municipal Auditorium, Memphis, Tenn.

(*Continued on page 16*)

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CALENDAR OF MEETINGS

(Continued from page 14)

21-28 American College of Obstetricians and Gynecologists, The Americana Hotel, Bal Harbour, Miami Beach, Fla.

22-29 International Academy of Pathology, Chicago

23-27 Society of American Bacteriologists, Morrison Hotel, Chicago

24-26 American Association for Thoracic Surgery, Sheraton Hotel, Philadelphia

24-27 Association of Western Hospitals, Civic Auditorium, San Francisco

24-28 National Association for Practical Nurse Education and Service, Statler Hilton Hotel, Detroit

26-28 Mid-West Hospital Association, Municipal Auditorium, Kansas City, Mo.

26-29 American College Health Association, Detroit

27-29 American Academy of Neurology, Sheraton-Cadillac Hotel, Detroit

29-30 American Psychosomatic Society, Chalfonte-Haddon Hall, Atlantic City

30 American Federation for Clinical Research, Haddon Hall, Atlantic City

MAY

1- 3 Tri-State Hospital Assembly, Palmer House, Chicago

2- 3 Association of American Physicians, Chalfonte-Haddon Hall, Atlantic City

2- 3 American Pediatric Society, Hotel Traymore, Atlantic City

2- 6 American Association on Mental Deficiency, Netherland-Hilton Hotel, Cincinnati

3- 7 Student American Medical Association, Chicago

4- 5 Society for Pediatric Research, Traymore Hotel, Atlantic City

7-11 International College of Surgeons, North American Federation, Chicago

7-12 Medical Library Association, Olympic Hotel, Seattle

8-12 American Psychiatric Association, Morrison Hotel, Chicago

8-12 American College of Physicians, Americana Hotel, Miami Beach.

10-12 Upper Midwest Hospital Conference, St. Paul Auditorium, St. Paul, Minn.

14-18 Texas Hospital Association, Memorial Auditorium, Dallas

17-19 Middle Atlantic Hospital Assembly, Convention Hall, Atlantic City

17-19 American Association of Plastic Surgeons, Commodore Hotel, New York City

22-25 American Urological Association, Biltmore Hotel, Los Angeles

23-25 American Laryngological, Rhinological and Otological Society, Lake Placid, N. Y.

25-27 American Gastroenterological Society, Drake Hotel, Chicago

29-31 American Gynecological Society, The Broadmoor, Colorado Springs

JUNE

3-15 International Medical-Surgical Meetings, Turin, Italy

12-15 Catholic Hospital Association, Civic Center Auditorium, Detroit

26-30 American Medical Association, Annual Meeting, New York City

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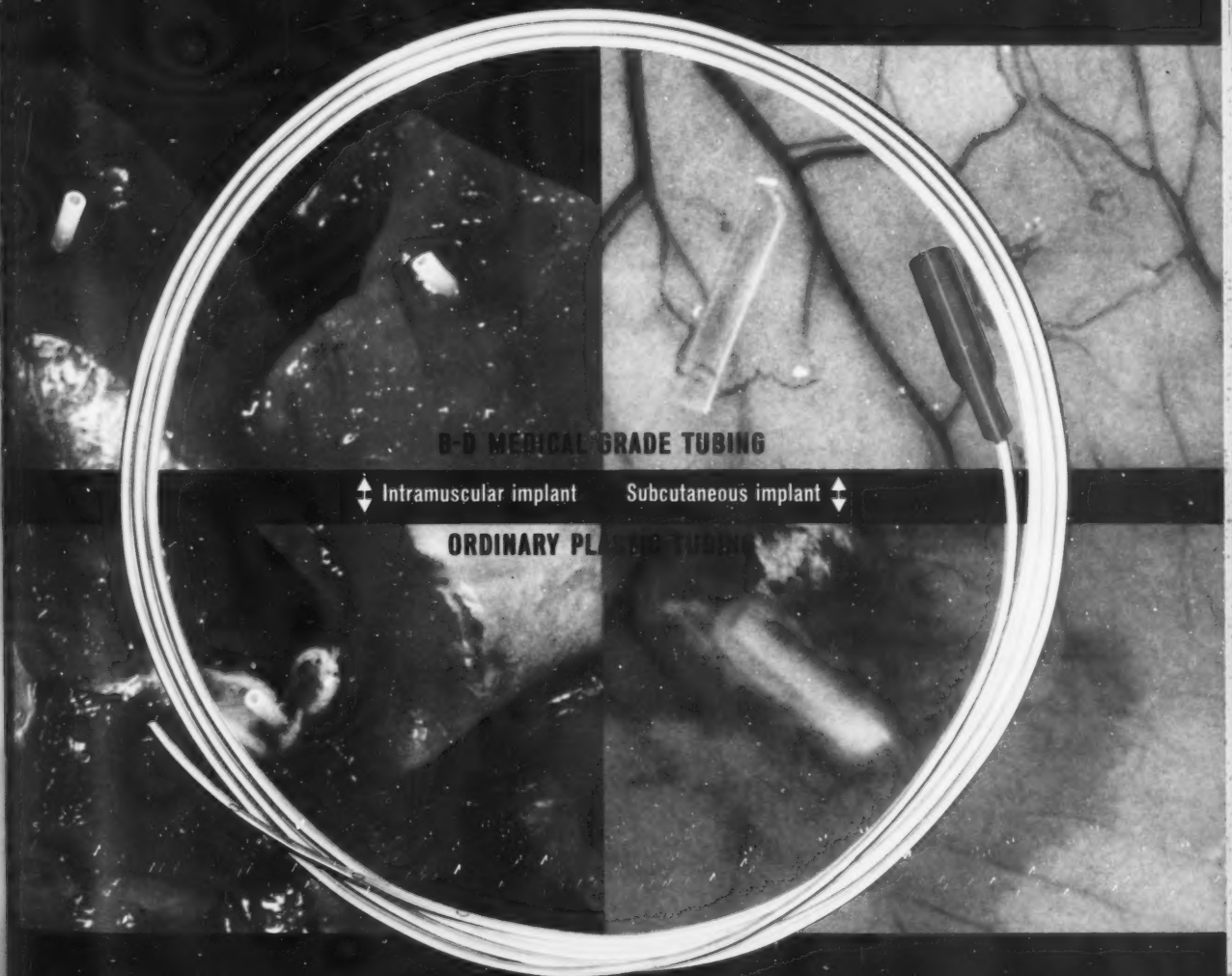

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American College of Surgeons

. . . San Francisco, Oct. 10-14

The American College of Surgeons should continue to assail the practice which permits a state medical license to serve as sufficient qualification for performing surgery, declared the organization's new president, I. S. Ravdin, M.D., in his presidential address at the 46th annual ACS clinical congress in San Francisco, October 10-14.

"Such a practice provides the means by which large number of men without adequate training attempt to do surgery, while at the same time practicing medicine," Dr. Ravdin said. This practice is not in the best interest of patients, he warned.

More than 60 percent of the surgery in this country is being done by men who are "essentially general practitioners" rather than trained surgeons, Dr. Ravdin told the congress.

Topics presents selected abstracts of some of the many papers given at the congress. A report on ACS sessions in obstetrics and gynecology appears in the O.B. department, beginning on page 79.

National Study Reveals Problems In Emergency-Room Care

It has been established that there has been an increase in emergency-room care and a decrease in the quality of that care. To study these problems in a local situation, 100 consecutive accident victims admitted to the hospital were interviewed about their initial care, the type of transportation used to get them to the hospital, the time spent in the emergency room, the x-ray department, and so forth.

Results pointed up several deficiencies in the hospital's emergency-room organization which have been corrected. It was interesting that of 20,000 admissions in a year to the emergency room, only 30 percent were accident cases.

For a nationwide study, the American Hospital Association joined with the American College of Surgeons and Cornell University Medical College. The country was divided into four geographical regions. In all, 330 hospitals were presented with 90 questions. Eighty-seven percent of the hospitals replied.

The San Francisco-Oakland area appears to be one of the few regions with a plan which specifies certain hospitals and areas for receiving emergencies.

Fifty percent of the rural hospitals said that the majority of their emergency-room patients traveled more than 10 miles to reach the hospital.

A majority of ambulance services are run by groups not under the control of a hospital staff. Only 65 percent required the attendants to be trained in first aid, and no hospital required that first aid rendered be recorded. Morticians lead the field in providing ambulance service.

In two-thirds of the hospitals which replied, the physical plant was inadequate. Minimum standards for emergency rooms outline the basic physical components necessary and the supplies most often available. Twenty-five percent of the hospitals did not have a central list of equipment and supplies posted in the emergency room. Seventy-one percent of hospitals thought the emergency room should be restricted to care of patients with injuries, but only 50 percent were able to limit its use for this purpose.

Standards have also suggested that supervision should be by a committee representing all services, but only one-third of the hospitals had an emergency-room committee. Screening in most instances is by a nurse or clerk who decides which specialty representative shall be called to attend to the patient.

Emergency-room manuals have been recommended, but only one-third of the hospitals had one. The ACS committee on trauma has stated that it believes that major operating facilities in an emergency room are impractical and inefficient; yet over half of the hospitals did major procedures, such as treating open fractures and suturing wounds. One-third had major operating facilities. One-third allowed general anesthesia to be used in the emergency room.

Twenty-five percent allowed the physician to bill the patient without ever having seen him, on the basis of a telephone conversation with a house officer or the nurse in charge of the emergency room, who apparently rendered a description of the patient's problem.

The impression has been confirmed that the spectrum of emergency-room care is widening to include all the specialties and that the incidence of trauma

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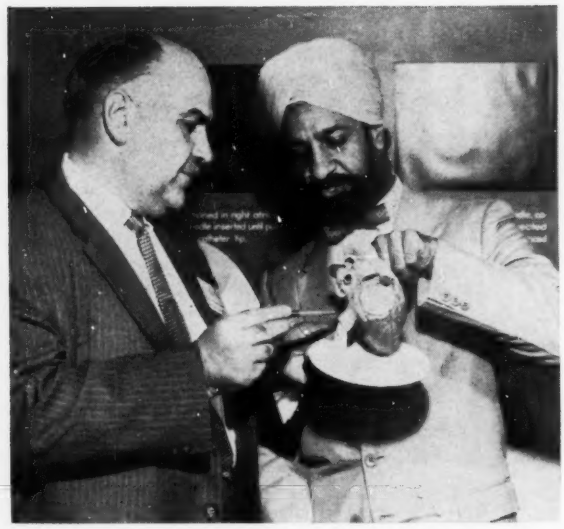


F. V. O'Donnell, M.D. (l.), Buffalo, N. Y., and Rajindra Sethi, M.D., New Delhi, India, examine scientific exhibit on transseptal left heart catheterization, prepared by John Ross, Jr., M.D., Edwin C. Brockenbrough, M.D., and Andrew G. Morrow, M.D., National Heart Institute, Bethesda, Md. Exhibit explained new method to pass catheter into the left heart through a needle puncturing the interatrial septum.

care is decreasing. Case loads during evening shifts are equal to day shifts, but personnel available in the evening are markedly inadequate in number.

There is need for a guide for the organization of emergency medical facilities and services. Such a guide will be published jointly by the American College of Surgeons and the American Hospital Association. — *Paul A. Skudder, M.D.*, Cornell University Medical College, New York City.

Insurance Fees Collected on Ward Patients Used to Aid Residents

The cost of postdoctorate education has become a serious problem. Nine months ago a committee was appointed to study the problem. Private clinics, municipal hospitals, state-endowed hospitals and endowed teaching hospitals were questioned.

Twenty years ago, the resident with a family would have been in a minority group, but today 70 percent of residents are married, and over half are supported by wives who work. A resident today needs $5,000 a year if he is married.

The conclusions of the committee's unofficial report are that surgical residents in training are in general inadequately paid and that the economic hardships of college and medical school are compounded in graduate training. The decreased output of medical schools would appear to reflect this hardship.

The financial responsibility of teaching has not been met in a realistic manner. Collection of insurance benefits on ward patients can be legally accomplished by a professional staff when the staff is properly organized. Funds should be administered at the discretion of medical staffs and not by institutions.

In one municipal hospital in the Middle West, insurance fees are collected on ward patients by professional members of the staff. They have effected an agreement with city officials for taking over funds derived from professional fees previously collected by the city. A waiver has been executed with Blue Shield so that payments are made to the corporation of collecting physicians. The hospital guarantees that all services are rendered by licensed physicians, and all expenditures are approved by the board of health. The $150,000 collected has been adequate to underwrite the expense of the house staff and a certain amount of basic research. The money is exempt from federal taxes because the collecting physicians are incorporated.

In state university hospitals, most residents are paid out of a budget from state-appropriated funds. Some are supported by national fellowships or traineeships.

The endowed university medical centers have the biggest problem. Competent medical care has been given for years in these hospitals, and in most instances insurance fees have not been collected. Blue Shield is not willing to pay fees for ward patients because county and state medical societies have put on pressure to avert such payments. Our committee believes that if a patient has had competent care, it is no business of the insurance company whether the person rendering the care wears a white suit or a white coat. The patient has paid for his insurance, and it is incumbent on the company to pay for the patient's care. — *J. Hartwell Harrison, M.D.*, clinical professor of genitourinary surgery, Harvard Medical School, Boston.

Discussion

Q. Who pays the income tax when the resident is licensed and collects the insurance fee?

DR. HARRISON: The fee does not go directly to the resident in any instance. He does not fill out the form or sign it. The fee is paid to the collecting group, which is a corporate entity. If the resident were paid directly by the insurance company, he would then have to pay taxes.

Q. How do we convince the county councils that this is a good idea?

DR. HARRISON: The advantages are obvious. The next step is to obtain legal advice for organization and arrangements with the Department of Internal Revenue.

Q. Are insurance fees collected by research foundations' income-tax problems?

DR. HARRISON: Such foundations should be established as tax-exempt before they function.

Report Findings Thus Far In Cancer-Virus Studies

In our studies to determine the relationships between viruses and cancer, we have found the following:

(1) Tumors can be induced by injection of filtrates of normal organs from tumor-bearing mice which originally received human material.

(2) Large numbers of presumably viral particles

are seen in the induced mouse tumors with the electron microscope.

(3) Two known animal tumor viruses, the polyoma virus and the Bittner mammary tumor agent, are not involved.

(4) Special tissue culture preparations from both the induced mouse tumors and human tumors have given rise to tumors in newborn mice in a limited number of experiments.

A definite causal relationship between these agents in the cultures and the mouse tumors has not yet been established, but the studies suggest that replicating material (possibly virus) is involved in the animal tumors. We are presently attempting to establish the origin and nature of this material. — *J. T. Grace, Jr., M.D., S. J. Millian, Ph.D., E. A. Mirand, Ph.D.,* and *R. S. Metzgar, Ph.D.,* department of surgery, Roswell Park Memorial Institute, Buffalo, N. Y.

Renal Failure Treated by Perfusion With Exchange Resin Column

In acute renal failure, when there is a rapid rise in serum potassium which cannot be controlled by conservative measures, there may not be time to assemble and operate an artificial kidney. We have developed an experimental method for perfusing the blood through a cation exchange resin column, utilizing an extracorporeal pump circuit.

Three patients with acute hyperkalemia were treated in this way. There was a decrease of the serum potassium levels, the electrocardiograms reverted to normal, and all patients improved clinically and showed no untoward effects from the perfusion itself. — *Robert J. Moore, M.D.,* and *Theodore H. Lehman, M.D.,* division of urology, department of surgery, University of Oregon Medical School, Portland.

Patients Cooled to 48° F., Kept During One Hour of Arrest; No Pump Used

Patients have been cooled to about 48° F. and successfully maintained during one hour of circulatory arrest without an oxygenator for surgery on the heart.

We have found that oxygen consumption is decreased by one-half when the body is cooled to 77° F., and is further reduced to 25 percent of normal at 71.6° F., 12 percent of normal at 61°, and three percent at 41° F.

These values allow the operator to calculate the periods of circulatory arrest which can be tolerated without resultant central nervous system damage. There has been no evidence of such damage in the clinical cases in this series. The electroencephalogram showed diminishing activity to complete arrest during cooling, with a slow return of activity during rewarming. — *Archer S. Gordon, M.D., Bertrand W. Meyer, M.D.,* and *John C. Jones, M.D.,* Children's Hospital and the University of Southern California, Los Angeles.

Method Utilizes Geiger Counters To Localize GI Tract Hemorrhage

An experimental method to localize hemorrhage in the gastrointestinal tract has been tested with good results in animals.

Three small Geiger counters, 0.3 x 2.5 cm., were spaced at eight-inch intervals within a modified Cantor nasogastric tube. A lead from each counter was connected to a count-rate meter.

Autologous red cells were labeled with radioactive phosphorus and injected into the dogs. A laparotomy was done and the Cantor tube with the Geiger counters was passed into the stomach, small bowel, or ascending colon. Controlled hemorrhage (2 to 15 ml.) into the lumen of the bowel was produced. By reading the count-rate meters, it was possible to determine within one or two minutes which counter was nearest the point of bleeding. This amount of blood was enough to produce a response that was 70 to 100 times the background count. There were no failures or false positive tests. — *William V. Healey, M.D., Robert C. Riggins, Richard White, M.D., David V. Habif, M.D.,* and *Wellington B. Stewart, M.D.,* departments of surgery and pathology, College of Physicians and Surgeons, Columbia University, New York City.

External Compression Found Effective In Resuscitation After Cardiac Arrest

Immediate application of external cardiac compression has proved as effective as open thoracotomy and internal cardiac massage in resuscitation of the patient in cardiac arrest.

The heart is readily compressed when the lower sternum is forcefully pushed several centimeters toward the spine. This is accomplished by placing the heel of one hand on the lower sternum and, with the other hand over the first hand, rhythmically exerting the body weight downward. Rib fractures seldom occur with proper, centrally exerted force.

(Continued on next page)

"The Early Medical Book" was the theme of a scientific exhibit presented by the library of the American College of Surgeons. As Ahad Baeczoy, M.D. (l.), San Antonio, Tex., looks over a rare volume, ACS librarian Kathleen Worst shows another book to F. J. Shasky, M.D., Medford, Ore. Exhibit included some books from the sixteenth and seventeenth centuries.

The intermittent pressure is made at 60 to 80 times a minute, with allowance for complete expansion of the chest and filling of the heart. The patient should be on a firm surface such as the operating table, a stretcher, bed boards, or the floor.

Intracardiac or intravenous 10 percent calcium chloride, 1:10,000 epinephrine, sodium bicarbonate and procaine amide or quinidine are given as necessary. Artificial respiration is given as soon as it can be instituted.

The method is continued until spontaneous cardiac activity, a palpable pulse, and spontaneous respiration recur. An electrocardiogram is taken immediately to determine whether ventricular fibrillation is present. If it is, external defibrillation is performed.

Eighty-four resuscitations have been performed in 68 patients, with a resuscitation rate of 70 percent. – *James R. Jude, M.D., William B. Kouwenhoven,* and *G. Guy Knickerbocker,* department of surgery, The Johns Hopkins Hospital and The Johns Hopkins University, Baltimore, Md.

Piperazine Derivative More Effective Against Subcutaneous Tumor Cells

A new piperazine derivative, A8103, is a more powerful cancerocidal agent against injected tumor cells than is nitrogen mustard, we found in experiments in rats. It is more effective against subcutaneously administered cells.

A8103 prevented tumor development in all rats for 20 days, in 82 percent for 40 days, and 70 percent for 90 days. Nitrogen mustard protected 60 percent for 20 days, and 20 percent up to 90 days.

The greater selective cancerocidal action of A8103 against subcutaneous cells is unusual and has not previously been seen in our laboratory with other anti-cancer agents.

The agent can produce fatal bone marrow depression in dogs. – *Alan Davies, M.S., Ernest Wibin, M.D., Everett Hoppe,* and *Frederick A. de Peyster, M.D.,* department of surgery, University of Illinois College of Medicine, Chicago.

I. S. Ravdin, M.D. (l.), Philadelphia, vice-president for medical affairs, University of Pennsylvania, is the new president of the American College of Surgeons. Dr. Ravdin, who had served as chairman of the ACS board of regents since 1954, is shown here with the president-elect, Robert M. Zollinger, M.D., professor and chairman, department of surgery, Ohio State University College of Medicine, Columbus.

Suggest Drug to Overcome Toxic Effects of Nitrogen Mustard

The use of sodium thiosulfate is suggested to overcome the toxic effects of nitrogen mustard used for regional cancer chemotherapy by perfusion.

In two patients, nitrogen mustard has been introduced locally while sodium thiosulfate was given intravenously. The dose of nitrogen mustard was 0.8 mg./kg. of body weight. No depression of the white blood-cell or platelet counts occurred. There was no nausea or vomiting. – *Charles A. Ross, M.D., David M. Carberry, M.D.,* and *Gunther E. Kraus, D.V.S.,* surgical departments of the Roswell Park Memorial Institute and the University of Buffalo School of Medicine, Buffalo, N. Y.

New Resident's Report Form Lists Number of Cases Done

A new form, to be used for general surgery experience only, switches responsibility for record-keeping from the chief of service to the resident himself. The form will list the number of cases done by the resident as surgeon and as first assistant.

Beginning next July 1, hospitals notified of scheduled inspection will be sent these forms in triplicate. Each man will be responsible for three copies – one for the conference committee, one for the chief of service or the hospital, and one for himself.

Men completing their residencies next June 30 must go back over their training programs to complete the form. The surveyor from the AMA next November will pick up the forms of the residents in this group. – *Robert M. Moore, M.D.,* professor, department of surgery, University of Texas Medical Branch, Galveston.

Device Enables Rapid Measurement Of Blood Volume by Dilution Methods

A new semi-automatic device permits rapid measurement of blood volume by radioisotope dilution methods. It eliminates the need for volumetric pipettings and human computations, and can be operated by technicians of ordinary competence.

The portable console unit contains appropriately shielded modules for radiation detection, amplification, discrimination, scaling, timing, and data processing. Read-out display of computed blood volume is provided by a calibrated panel meter. There is storage space for the supplies needed (prepackaged radioactive tracer doses, syringes, needles, and sample containers), all of which are disposable.

The dose of radioactivity injected is determined

directly by placing the syringe in the "dose counting well" of the instrument before and after injection of the contents. Samples of whole blood or plasma drawn before and 10 to 12 minutes after injection are delivered into special sample containers and placed, respectively, in the "background well" and the "sample well," where the net specific activity of the post-mixing sample is measured. Data accumulated in these operations are automatically processed, and the computed volume, in milliliters, is promptly indicated on the panel meter.

Total time required for a determination is approximately 16 minutes. — *John A. Williams, M.D.,* and *Jacob Fine, M.D.,* departments of surgery, Beth Israel Hospital and Harvard Medical School, Boston.

Perfusion Treatment of Snakebite Successful in Dog Experiments

Because 98 percent of snakebites occur on the extremities, a method of treatment utilizing isolation and perfusion of the bite area with antivenin seemed logical. We tested this method in dogs.

Venom obtained from red rattlesnakes was pooled in order to maintain a constant toxicity level. It was injected into a hind leg of the dog. A tourniquet was applied, and isolated limb perfusion was carried out. After perfusion, the system was washed with heparinized whole blood.

Following perfusion, no further extension of edema or local hemorrhage occurred in eight of the nine dogs so treated. The ninth dog developed a femoral arteriovenous fistula and died in 12 hours. Another dog, given hydrocortisone locally, developed marked local tissue necrosis and infection of the leg, and subsequently died.

Six control dogs were treated by current methods of therapy, including tourniquet isolation, incision with suction, local injection of antivenin, intravenous administration of antivenin, and cryotherapy. Tissue necrosis and limb swelling were much more marked and mortality was higher than in perfused dogs. — *James Borden, M.D., Eric W. Fonkalsrud, M.D., Victor Newcomer, M.D., William P. Longmire, Jr., M.D.,* and *Donald B. Rochlin, M.D.,* departments of surgery and dermatology, University of California Medical Center, Los Angeles.

Progressive Grafting Offers Hope For Severely Burned Patients

Systematically progressive excision and grafting in severely burned patients offers hope for otherwise hopeless situations, we believe on the basis of our experience thus far.

Burned tissue is removed and grafts are applied as early as the fourth or fifth post-burn day. At each procedure, 15 to 20 percent of the total body surface is excised and the areas are covered with large sheets of split-thickness autografts either at this time or at the subsequent procedure. Homografts are used if necessary.

The operations are repeated every three to four days until the fourteenth to seventeenth day, by which time the greater part of the burn has been removed. Thus, as the patient enters the phase of highest mortality, he is better able to withstand septicemia and other major complications.

The remainder of the burn, which is no longer suitable for excision, is small enough to be compatible with life and can be treated by conventional methods. At this time, the original donor sites are ready for re-use.

Nine patients with expected mortality greater than 85 percent have been treated in this manner. Seven of them were in the 100 percent expected mortality group. The three survivors were in the 85, 90, and 100 percent estimated mortality groups. All six patients who died were in the group with 100 percent expected mortality. — *Lester M. Cramer, M.D., Daniel B. Carroll, M.D.,* and *Robert M. McCormack, M.D.,* University of Rochester Medical Center, Rochester, N. Y.

Say Ostamer Acts as Intramedullary Rod, Not as Bone Adhesive

The use of polyurethane foam (Ostamer) in experimental fractures in animals failed to substantiate claims that it acts as a bone adhesive. We found that it merely acts as an intramedullary rod, conforming to all the bony irregularities within the marrow cavity and thus providing some measure of mechanical stability.

Used alone without adequate ancillary metal fixation, it is not of sufficient strength to allow early ambulation of quadruped animals. The most successful results in our study were obtained in animals in which Ostamer and bone plates or screws were used.

Ostamer may serve as a framework for fibrous tissue ingrowth, but this is limited by the closed lacunar system of the substance. Our study failed to show evidence of osteoblastic activity within the lacunae of Ostamer. — *R. K. Macoomb, M.D., C. Hollenberg, M.D.,* and *W. Zingg, M.D.,* department of surgery, University of Manitoba, Winnipeg, Man., Canada.

Dye Injection Permits Recognition Of Full-Thickness Burns

Injection of direct sky blue dye into burns seems to be an accurate method for early recognition of full-thickness burns, making it possible for excision and skin coverage to be done without delay.

The dye has a special affinity for the lymphatic system. When it is injected into partial-thickness burns, it is rapidly taken up by the skin lymphatics and spreads centrifugally. In full-thickness burns, the skin lymphatic systems are destroyed. When the dye is injected, it remains as a small blue dot at the injection site. — *J. Harold Conn, M.D., William R. Fain, M.D.,* and *Elizabeth Ferrington, M.D.,* departments of surgery and pathology, VA Center and University of Mississippi Medical Center, Jackson.

(Continued on next page)

Avoiding Government Control of Medicine

If I thought that government control of medical care would preserve the present quality of care, not to speak of further improving the quality, I would have no objection to this solution of the problem of increasing costs of medical and surgical care – except that I deplore the rapid increase of paternalism in government.

I do not think that the medical profession has any vested rights in medical practice. Only the patient has rights; the doctor has only responsibilities. I am not impressed with the sanctity of free choice of doctors, because most people are unable to exercise this choice wisely. They gaily hop on an operating table and let a general practitioner, with no training in surgery, wander about in their insides. The medical care of miners and of veterans is better than average because some competent person chooses the doctor.

But I do have grave reservations about the effect of government control upon the quality of care. If doctors are regimented as they are in a number of foreign countries, the quality of care will drop rapidly.

In the regimented system of medical care in which I spent the larger part of my life [the Army], there were several types of doctors. There were the dedicated doctors who gave a high quality of medical care, and at the other extreme there were the doctors who considered that they were job-holders, and gave just enough care to keep themselves out of trouble. Between these two extremes there were varying degrees of interest in patients.

I am quite sure that there are similar variations among doctors in the private practice of medicine. However, competition in free-enterprise practice prevents the indifferent doctor from completely neglecting his patients, which he can do when employed on a salary.

It is for these reasons only that I am unalterably opposed to any government control of medical care. I think that quality is vastly more important than quantity of medical care.

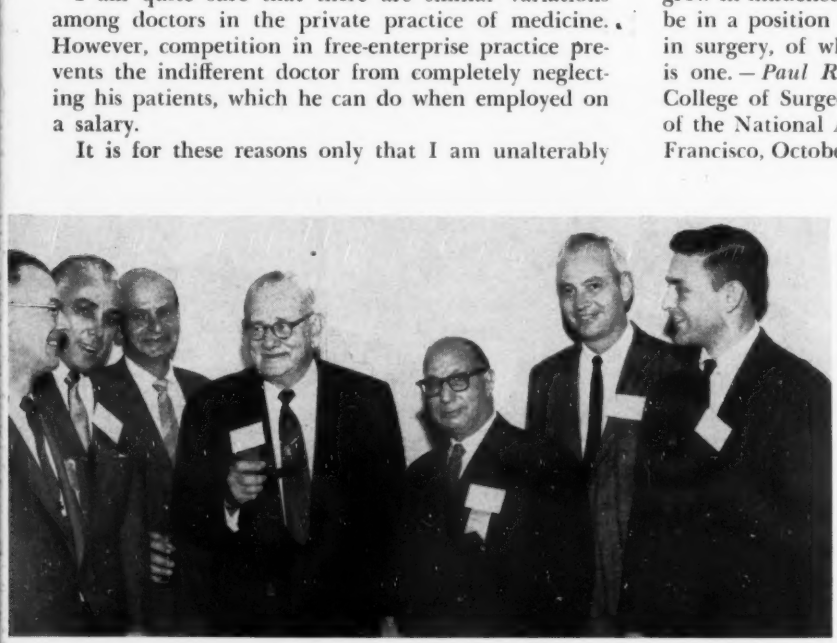
The solution I suggest is a simple one – but it will not solve the problem overnight. First, we must keep fees within the reasonable ability of self-supporting families to pay. People must recognize that medical care is as essential an item as food, rent, and clothing, and budget for it accordingly. The best way to budget for it is through insurance.

The public must be taught some of the economics of medical care and, whenever possible, to insist upon discussing fees before arranging for the service.

Surgeons must also be educated in the economics of medical care – what is a reasonable fee and what is not, what must be considered in setting a fee – and persuaded to discuss the financial arrangement before fixing the fee. One great weakness in the training of surgeons is that residents are not taught how fees should be fixed.

Surgeons must be prevented from charging exorbitant fees. The answer to exorbitant fees is the *conscientious* family physician who will not tolerate overcharging of the patients he refers to surgeons. The family physician who demands a cut of the surgical fee is no protection, and it has been the experience of the ACS that there is the suggestion of fee-splitting in a large proportion of exorbitant fees which have come to our attention.

If the American College of Surgeons continues to grow in influence as well as in numbers, it will shortly be in a position to control most of the bad practices in surgery, of which the charging of exorbitant fees is one. – *Paul R. Hawley, M.D.*, director, American College of Surgeons, Chicago, speaking at a meeting of the National Association of Science Writers in San Francisco, October 12.



Science writers held a reception and dinner in honor of Paul R. Hawley, M.D., (fourth from left), retiring director of the American College of Surgeons. L. to r.: Don Dunham, *Cleveland Press and News*; Arthur Snider, *Chicago Daily News*; Milton Silverman, San Francisco; Dr. Hawley; Gobind Behari Lal, *Los Angeles Examiner*; Pierre Fraley, free-lance science writer, Philadelphia; and Earl Ubell, *New York Herald-Tribune*.

From the annual convention of the

American Dietetic Association

. . . Cleveland, Ohio, Oct. 18-21

Reduced Calorie, Water Intakes Affect Performance Capacity

Long-term studies on diet and human performance are costly, particularly in terms of subject time. Because of the expense involved, we endeavored to cover the changing nutritional status of our subjects as thoroughly and as concisely as possible. Efforts were directed toward coverage of the following areas:

1. *Body composition,* examined by anthropometric, biophysical, and biochemical methods, and including alterations in body fat, water, and "active tissues."

2. *Metabolic characteristics,* including energy metabolism, nitrogen metabolism, blood sugar and ketone substances.

3. *Cardiovascular characteristics,* including work and recovery pulse rates, electrocardiographic analysis, and roentgenographic studies.

4. *Performance capacity,* as measured by tests of sensory and motor functions.

5. *Subjective appraisal,* as indicated from standardized questionnaires and rating devices.

Of the three major experiments, two dealt with effects of calorie restriction and one with a water restriction superimposed on a calorie restriction. One diet allowed 580 calories per day for 12 days; the second 1,000 calories per day for 24 days. The diet incorporating the water restriction allowed 1,000 calories per day for 16 days. The average calorie deficit was 2,000 calories. Moderate physical work was performed in the form of treadmill walking.

Earlier experiments established that young men performing hard work under acute starvation conditions but with no limit on water intake would develop dehydration, hypoglycemia and ketosis, accompanied by nausea, fatigue, poor work tolerance, and impairment of speed and coordination.

The diet providing 580 calories prevented ketosis and demonstrable liver damage, but failed to maintain adequate levels of blood sugar during physical work. On the diet providing 1,000 calories per day, in the presence of adequate salt and vitamin intake, hypoglycemia was no longer present, and there was no temporary rise in the urinary ketone excretion. Physical fitness was not importantly affected, and alterations in motor functions were small.

In the water restriction experiment, in which the daily intake was limited to 1,800 ml., adaptation enabled subjects to establish a water balance in about one week.

The intake of 900 ml. of water, maintained for five full days, was not adequate to meet physiological requirements. The measured aspects of physical fitness showed only a moderate departure from the normal. The most sensitive criterion of dehydration was the elevation of rectal body temperature induced by sustained physical work. Increments in body temperature obtained at the end of the fifth day indicated that thermoregulation was the most vulnerable mechanism in water deprivation, and the potential source of a breakdown of homeostasis.

If the dehydration became more severe, and the men were forced to carry on strenuous physical work for longer periods of time, cases of heat stroke could be anticipated.—*Josef Brozek, Ph. D.,* professor and chairman, department of psychology, Lehigh University, Bethlehem, Pa.

Simple Field-Test Method Measures Cleaning Effectiveness

The vast number of procedures tried in the past thirty years testifies to the need for an adequate field-test method for measuring effectiveness of cleaning procedures and clean surfaces.

In our test, a reagent consisting of 85 percent talc and 15 percent safranine 0 by weight was used. The dry talc and the dye powder are thoroughly mixed and put into a salt shaker. This mixture is then dusted over the surface to be examined, from a height of not more than two inches.

A light application of powder will be sufficient; it is not necessary that the entire surface be covered. Cups and glasses should have the powder dusted over the inner bottom surface only. Surfaces to be examined must be thoroughly dry before dusting.

The dusted utensil is then held under a flowing tap for at least five seconds, or until no remaining trace of red color is rinsing off. Dishes are drained on edge, cups and glasses upside down, until dry.

Any red color on the dry utensil is an indication of a soiled area. The intensity of the red color is roughly quantitative with respect to the amount of residual

(Continued on next page)

soil film remaining on the surfaces. Water spots have not been found to interfere, as they do not stain.

This procedure may be used on a variety of materials, including glass, china, silverware, stainless steel, and most plastics. The common melamine surface can be tested by this procedure only while it retains the mold finish. When it has been badly worn to a point where the mold finish has been removed, a false staining action may result.

A very good operation will produce a dish which will take up no stain whatever. A passing operation may show a faint pink haze, while the improper operations invariably show a good deal of bright red color.

This procedure may also be used to determine whether the clean dishes have been handled properly after washing. Even fingerprints show up as red smudges and are easily recognized by the whorl pattern.—*E. H. Armbruster and G. M. Ridenour,* department of environmental health, School of Public Health, University of Michigan, Ann Arbor.

Separate Tests in Crucial Areas Needed in Integrated Program

The current trend in nursing curricula is toward integration. Because of this close integration, the question is often asked as to whether there is a necessity for separate tests in various subject areas. In answer, it should be pointed out that there is need for evaluation of student attainment in all crucial subject areas in programs that prepare for health fields. The more the curriculum is integrated, the more the faculty must take care that the evaluation of important ability areas is not being slighted.

The National League for Nursing provides tests and testing services widely used by schools of professional and practical nursing and by state boards of nursing. These services include selection and achievement tests for the schools as well as licensure tests for state boards.

Nutrition and diet therapy questions are incorporated into the licensure tests and also into all of the clinical nursing tests offered to schools. In addition, a separate test in nutrition and diet therapy is available to basic professional nursing programs.

In 1961, work will start on a test to replace the current NLN achievement test in nutrition and diet therapy. The ADA-NLN interorganization committee will assist in planning for the test.

The content of a test should reflect the relative importance of the various abilities it was designed to measure. Nutritional aspects of care comprise 13 percent of the questions in the current medical-surgical achievement test, and 11 percent in the current obstetric nursing achievement test; both of these tests are for basic professional nursing programs.

Nutritional questions are classified not merely under the general heading of nutrition, but also according to such categories as understanding of normal needs, purposes and effects of therapy, manifestations of deficiency conditions, selection of care in accordance with patients' needs, and chemistry of foods.—*Mrs. Mary Shields,* director, test construction unit, National League for Nursing, New York City.

ADA Pilot Project to Train 24 Food-Service Supervisors

A 12-month correspondence course for the training of the food-service supervisor has been started by the American Dietetic Association, using funds made available by a grant received from the W. K. Kellogg Foundation.

Twenty-four students began the 15-lesson course on October 15. Curriculum materials were compiled and reviewed by the project director and an advisory committee.

Students were chosen from applications received from member hospitals of the Iowa, Nebraska, and South Dakota hospital associations. Selection of students was made by the project director and representatives of the hospital and dietetic associations.

Each student will have a preceptor to guide and counsel her in her study. The preceptors are members of ADA and have been selected by representatives of the state dietetic associations and the project director. A meeting has been held for the preceptors for briefing and orientation.

The students will convene in April, 1961, for intensive training, review, and evaluation. At the end of the year the training program will be evaluated. —*Sallie J. Mooring,* project director, food service supervisor program, American Dietetic Association, Chicago.

Psychological Principles Play Part In Sound Management

One of the first requisites for good human relations in business is a sound management philosophy regarding the role which business should play in a democratic society, and the attitude management should assume in its relationship with employees and associates.

In American business, we recognize variations of two extremes. One is the idea that the employee is a commodity to be bid for, developed, and protected as any other commodity, primarily to serve the purposes of the organization. Emphasis in employee relations is primarily on control, and such employee benefits as may be provided are largely expedient, or paternalistic gestures.

The other extreme might be called a cooperative philosophy of management, where the emphasis in employee relations is on the development of teamwork, on soliciting ideas, on participation, on considering each employee as a member of the organization. In the last decade, there has been a noticeable trend toward this latter form.

In addition to an enlightened management philosophy, good human relations are dependent upon the application of certain psychological principles:

1. *The principle of individual differences.* No two individuals or groups are exactly alike. Only by recognizing the differences can we fully utilize human resources.

2. *The principle of integration.* No specific act of an individual can be evaluated properly except in relation to factors of experience and environmental circumstances. Such influences as home environment, economic status, health, and social, cultural, and recreational needs must be evaluated along with the individual's work circumstances.

3. *The principle of motivation.* In the dynamic process of human behavior, motivation provides the energizing force which sustains behavior and gives it direction. Psychological needs must be satisfied, or behavior loses its dynamic qualities and becomes aimless and confused, with a corresponding lowering of personal efficiency and morale.

4. *The principle of learning by doing.* One of the laws of learning is that habits and skills are acquired most readily through actual performance of the activity in question. This principle is equally applicable to the development of abilities needed in the proper exercise of higher-level responsibilities as it is to the instruction of employees on more routine job duties. Only through the actual performance of management activities can the necessary skills be acquired.—*Brantley Watson,* vice-president—human relations, McCormick & Co., Inc., Baltimore, Md.

Joint MLN-MDA Committee Develops New Diet Publication

Guidelines for Teaching Nutrition and Diet Therapy in Schools of Nursing has been developed by a committee made up of three members each of the Maryland League for Nursing and the Maryland Dietetic Association.

The guide was expanded from an outline submitted by the joint committee of the National League for Nursing and the American Dietetic Association, entitled "Understandings and Abilities Needed by Nurses in Relation to Nutrition and Diet Therapy."

It should be valuable to nurses and dietitians working together on faculty committees of schools of nursing, and to the teaching dietitian alone, in her execution of the planned program in nutrition education. —*Mary V. R. Edmonds,* instructor in nutrition, Union Memorial Hospital, Baltimore, Md.

Program Networks Needed In Aged Institutional Care

The older population represents a different social phenomenon than in days past. Persons 65 and over constitute almost one-tenth of our total population. They live longer, their diseases can be cured or retarded, and a base of economic security has been assured through social security and through the extension of pensions and private insurance. Efforts are under way to solve the last major economic burden, the cost of health and medical care.

Especially in metropolitan communities, we recognize that a network of programs is needed, both to sustain the older person in independence, and to care for him when he can no longer care for himself. Retirement preparation and counseling programs, recreation, education and service opportunities, camping trips, and other activities are aimed at enhancing the leisure of retirement years.

Institutions are only a part of the total pattern of community services. A person at age 65 does not expect to go into an institution. When he does enter, he does not necessarily expect to remain there. In essence, the institution of today is a place of hope and cure, not a place of death.

The modern institution tries to be selective in the type of patient it admits, selecting such persons on the basis of their need for the particular services which the institution can provide. The progressive institution employs a competent professional staff, numbering members from many disciplines, which can work together for the good of the patient.

The modern institution also does not conceive of itself in isolation in the community. Its board of directors or advisory board is composed of leading community citizens, and the staff participates in interagency and community affairs. The institution is a part of the community team.—*Mildred C. Barry,* executive secretary, health council, Welfare Federation of Cleveland, Cleveland.

Mental Hospital Structure Necessitates Close Cooperation

The dietitian employed in a mental hospital is often confronted with situations that are peculiar to that type of institution. The organization differs considerably from that of a general hospital. The head of the mental hospital is usually called a superintendent, and he is generally a physician. His administrative responsibilities and authority are delegated to other officers, including the assistant superintendent, clinical director, and business administrator.

The superintendent is interested in the menu planning, and may insist upon taking part in it. However, the other functions the dietitian will perform will probably come under the responsibility of the business administrator. The problem of two bosses arises, necessitating some on-the-job training in diplomacy and some arrangement as to the delineation of authority.

It is fairly obvious that the dietitian and business administrator must work closely together. The business administrator is interested in the quality and variety of food prepared, but his primary concern is that the dietary department operate within its allotted budget. The dietitian is interested in operating within the budget, but is more deeply concerned about the food quality, appetizing menus, variety, and appeal.

The business administrator and the dietitian can both accomplish their aims by working together. Conversely, neither can accomplish much by striking out individually. When they work together, the dietitian appreciates the fiscal problem, and the business administrator knows that the quality of food has not been sacrificed to stay within budget limitations.—*William Brenizer,* business administrator, Richmond (Ind.) State Hospital.

American Heart Association

The 33rd scientific sessions of the American Heart Association were held October 21 to 23 in St. Louis. Following are some abstracts of important papers.

Report Congenital Heart Disease In Five Members of One Family

The role of genetic factors in congenital heart disease has not been clearly established. Review of recent studies on a total of 1,565 patients with congenital heart lesions indicated an incidence of less than two percent among siblings of the patients.

However, the occurrence of congenital heart disease in five members of one family, consisting of the parents and 10 children, with an interatrial septal defect of the secundum type in each affected member, indicates the great likelihood of genetic transmission.

The occurrence of interatrial septal defects in three members of one family has been known, but no larger familial incidence of this type has been reported previously. — *Bertram J. Allenstein, M.D.,* Beverly Hills, Calif., and *Max H. Weil, M.D.,* Los Angeles.

Emotionally Unstable Patients Show 'Brittle' Anticoagulant Effect

A total of 407 patients on prolonged anticoagulant therapy have been followed for periods of one to six years. The anticoagulants have been controlled by the authors' standard clotting time.

Eighty-seven percent of these patients showed a stable anticoagulant effect within six to eight weeks, permitting lengthening of the interval between control tests to four or five weeks. Thirteen percent exhibited a "brittle" anticoagulant effect. The patients in this group were all emotionally labile and exhibited frequent outbursts of acute anxiety.

During such phases previously adequate anticoagulant dosage became inadequate, with shortening of the standard clotting time. In some this effect of acute anxiety became manifest within two or three hours; in these cases the possibility of altered gastrointestinal absorption of the drug could be eliminated.

Emotionally unstable patients on anticoagulant therapy need frequent control tests to avoid excessive or inadequate treatment. They should be advised to report at once without appointment for a check of their therapeutic control whenever they are under emotional stress.—*George A. Mayer, M.D.,* and *W. Ford Connell, M.D.,* Kingston, Ont., Canada.

Improved Method for Inducing Total Body/Regional Hypothermia

An improved method for induction of total body or regional hypothermia enables the temperature to be controlled easily and simply at any level. The apparatus consists of a single heat-exchanger with simple bypass connections. The operator of the pump oxygenator can provide total body or cardiac hypothermia by merely occluding one or two systems of tubing.

Elective cardiac arrest is accomplished by transaortic or direct coronary perfusion with cold blood at 4°C. Following this type of induced cardiac arrest, the recovery period of the heart is more rapid, and the organ is able to support the circulation more effectively than after comparable periods of potassium-citrate arrest.

The technic may be used when indicated during operations on poor-risk patients with tetralogy of Fallot or acquired valvular disease. Moderate total body hypothermia (27° to 31°C.) has been employed routinely for perfusions lasting more than 45 minutes, with considerable benefit to the patient. Deeper levels of total body hypothermia (18° to 21°C.) can be induced to permit total circulatory arrest when the intracardiac operative field is flooded from a persistent surgical (Potts) shunt or a large collateral circulation. — *Benson B. Roe, M.D.,* and *William L. Weirich, M.D.,* San Francisco.

Fate of a Patient With A So-Called 'Mild Coronary'

One hundred "good risk" coronary patients were observed for five years after the initial infarction for the purpose of examining the premise that these people have the least significant chronic disability and require the least vigorous therapeutic measures.

This "good risk" group refers to those patients who suffer an initial infarction with mild subjective reactions and without arrhythmias, congestive failure, or shock. The myocardial involvement is presumed to be limited to small noncritical areas. The electrocardiographic abnormalities mainly revert to normal within short intervals. There is a small initial mortality rate (five percent).

The following observations were made: (1) 54 percent suffered from disabling coronary insufficiency pain after recovery from the infarction; (2) 48 percent had recurrent myocardial infarctions on an

average of 21 months after the initial attack; (3) 82 percent of those with recurrent infarction were among the group who had persistent insufficiency pain; (4) the recurrent infarction invariably involved the previously afflicted area of the myocardium; and (5) the mortality rate in the recurrence group was 18 percent.

The data appear to negate the category of a "mild" or "good risk" coronary patient, particularly when the pain of coronary insufficiency persists after an initial infarction. They also suggest that in many instances a myocardial infarction is produced by an incomplete evolvement of the responsible factors which then remain poised to redevelop within a short interval.—*William Likoff, M.D., Leonard Dreifus, M.D., and Sheldon R. Bender, M.D.,* Philadelphia.

Test of Stethoscopes Shows Majority Inadequate for Cardiac Examination

Differences in stethoscope efficiency and in levels of environmental noise are the major factors in audibility of a cardiovascular sound.

Tests of 33 stethoscopes in current use revealed three-fourths of them to be down seven decibels or more in efficiency of sound transmission, and some to be down as much as 12 decibels (a 15-1 ratio). Only about one-third of the stethoscopes tested could be considered adequate for cardiac examination.

A more than 300 percent average improvement in the stethoscopes was achieved by shortening them to an over-all length of 20 inches, replacing soft or thin-walled rubber by plastic tubing of 3/16" internal diameter, and eliminating leaks at the earpieces, change-over valves and chest-pieces. — *Dale Groom, M.D., Clarence S. Davis, and Wofford W. Francis,* Charleston, S.C.

Correction of Complete Heart Block By New Implantable Pacemaker

Although chronic atrioventricular block has been successfully corrected by a variety of external electrical pacemakers, two difficulties have been encountered with them on a long-term basis: (1) a rise in threshold currents has been observed with monopolar electrodes so that after a few weeks the stimuli required produce unpleasant side-effects; and (2) the necessity of having a lead wire come out through the skin may lead to infection and places obvious restrictions on the patient's activities.

Recent evidence indicating that bipolar electrodes have low and stable thresholds has been confirmed in our laboratory and has led to the design of a miniaturized self-contained and implantable pacemaker. The device measures only 5 cm. in diameter and 1.5 cm. in thickness, including its battery supply. The current drain is so low that a lifetime of from five to six years can be expected. Since the unit is implanted subcutaneously, it may be easily replaced under local anesthesia without disturbing the electrode on the myocardium.

Clinical experience has been obtained in nine patients, with extremely gratifying results. Several of these pacemakers have now been used continuously in patients for periods in excess of three months at time of this writing.—*William M. Chardack, M.D., Andrew A. Gage, M.D., and Wilson Greatbatch,* Buffalo, N.Y.

Describe New Operation To Correct Congenital Heart Deformities

Certain congenital cardiac deformities characterized by malfunction of the right atrium or right ventricle, or both, that cannot be corrected by open-heart surgery will benefit from a new operation which connects the superior vena cava with the pulmonary artery. By this method, the unoxygenated venous blood actually bypasses the right side of the heart, going directly to the lungs before returning to the left side to be pumped out to the body again.

The operation has been successfully applied to six patients—ranging in age from 41 years to seven months—with a variety of right-sided heart defects. All have apparently been benefited, as indicated by the relief of symptoms and the increase in oxygen content of their blood.—*William W. L. Glenn, M.D., Nelson K. Ordway, M.D., Remedios Sunico, Ruth Whittemore, M.D., and Marie J. Browne, M.D.,* New Haven, Conn.

New Microscopic Technic Enables Greater Surgical Precision

Results of vascular surgery have been uniformly poor in vessels below 4 mm. in diameter. New technics for vascular anastomoses under a dissecting microscope obtain far greater precision. There is a choice of a lens-to-subject distance of 8 or 12 inches. The actual anastomosis is carried out under 10 to 25 magnifications.

Using the dissecting microscope, exploratory surgery has been performed on two newborn infants with biliary atresia; small arteries in the legs of two adults suffering severe pain from arteriosclerosis have been reconstructed and operations on the coronary arteries supplying the heart have been successfully performed in experimental animals, with 100 percent success in operations on animal blood vessels measuring 3 mm. in diameter. A 3-mm. anastomosis requires 20 to 25 stitches. Extra fine silk is used, and still finer materials are being developed.—*Julius H. Jacobson, II, M.D., Donald B. Miller, M.D., and Ernesto Suarez,* Burlington, Vt.

Cholesterol Doesn't Affect Heart-Attack Survival

Patients with coronary heart disease have higher average serum lipid levels than control groups. Cumulative survival curves were examined for 120 male patients, aged 30-80, who had survived myocardial infarction and were free from complicating diseases. The over-all five-year survival time was 60 percent.

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The survival curves were identical for both groups: those with high cholesterol levels and those with low levels. The results indicate that once myocardial infarction occurs, there is no relationship between survival and the concentrations of serum cholesterol. —*Robert D. Roe, Alick Little, and Henry M. Shanoff, M.D.,* Toronto, Ont., Canada.

Drugs Lower Death Rate Of Hypertensive Patients

The impact of drugs on mortality rate in hypertensive disease was observed by comparing the five-year mortality rates of 2,822 medically and surgically treated patients in the pre- and post-drug era. The results indicate that the over-all mortality in the medically treated group has become more favorable in the post-drug era, falling from 53 to 27 percent.

The surgically treated patients, in comparison, showed an increase from 12 to 24 percent. It seems reasonable to attribute the decrease in mortality of medically treated patients to effectiveness of drugs. However, the increase in mortality of surgical patients, being unexplained by the composition of the study group or operative mortality, must be explained by other subtle factors such as screening out of "responsible" patients by drug treatment, or a longer interval between onset and operation due to trial and failure of drugs.—*Dera Kinsey, M.D., Herbert Sise, M.D., George P. Whitelaw, M.D., Raymond Walther, M.D., and Reginald H. Smithwick, M.D.,* Boston.

Digital Computer Newest 'Consultant' In Diagnosing Heart Diseases

The estimated probability of 63 "symptoms" (age group, complaints, physical signs, electrocardiogram, and x-ray findings) occurring in each of 33 congenital heart diseases was punched on cards and fed to a Burroughs 205 digital computer. The computer was programmed to calculate from this information the likelihood of each disease.

Experience has shown that the computer does make a diagnosis from clinical data which agrees well with the diagnosis of a group of experienced clinicians. If the printed list of diagnoses provided by the computer contains no one diagnosis whose probability approaches 1.0, additional information is required for a more definite conclusion. The contribution made by any one symptom toward establishing a diagnosis may be quantitatively evaluated by comparison of the differential diagnosis made by the computer with and without this symptom.

From its own experience, and data supplied from physiologic studies, surgery, or autopsy, the computer can revise its earlier data and improve its subsequent performance.—*Homer R. Warner, M.D., L. George Veasy, Alan F. Toronto, M.D., and Robert E. Stephenson,* Salt Lake City.

American Cancer Society

The annual meeting of the American Cancer Society was held October 26-28 in New York City. TOPICS *presents abstracts of three lectures from the meeting.*

President Tells Latest Advances In Assault On Cancer

We gave nitrogen mustard to our patients with cancer of the breast at the time of the operation in order to kill the cancer cells dislodged from the tumor in operating and a short time previously. We are obtaining some very encouraging data. Over four and one-half years we have treated 60 patients along with 60 control patients having radical mastectomy only. In the control series, 15 patients have died of their cancer, whereas in the treated series only six have died of cancer.

However, in our colon and rectum series, we have observed no benefit from the procedure. We expected this, since certain drugs are effective with a given tumor whereas another is not.

The adjuvant committee of the National Institutes of Health also reported favorable results from the standpoint of recurrence with cancer of the breast, but doubtful results with other tumors, using thio-TEPA instead of nitrogen mustard. In fact, their results were superior to ours and are so striking that we might expect the procedure to become routine in a year or two.

Great interest, too, is being shown in the technics of perfusion and infusion of chemicals. Moreover, it appears we may soon be able to administer "antidotes" to the body outside the perfused area, thus minimizing still further the toxic action of the drug on normal cells.

The case for virology in cancer is growing. Teams at Roswell Park Memorial Cancer Institute and Sloan-Kettering Institute have found what most surely is a virus in specimens of human cancers. Previously, others had identified in photomicrographs what appear to be virus particles. Still others have found a tumor-causing virus in certain types of animals which

leaps the species barrier, causing cancer to appear in another type.

This does not necessarily mean that the fantastic course of seeking a Salk-like vaccine need be undertaken. Cancer may well respond to forces within the body whether or not a virus is involved. We have well-documented evidence of some 125 cases in which far-advanced cancers seemed to cure themselves.

One cannot describe the impact of a disease that kills a quarter million Americans every year without looking to other life-saving efforts. Toward this end, the society has called a conference of experts in the field of immunology to be held next March.

One point that comes out again and again is that cancer, when diagnosed while local and treated promptly, has a far better prognosis than when it begins to spread. More can be done against cancer through education than in any other aspect of our program. Too often eight to ten months elapse before the patient gets to the physician for definitive treatment.

We are making very good progress with cancer of the uterus, and we have high hopes for our new program aimed at colon and rectum cancer. However, we are making only slight progress against cancer of the breast, and our efforts in lung cancer have been strikingly ineffective. If the public would think in terms of prevention, we might move ahead here more rapidly. We know far too little about the factors which motivate people in seeking medical help or why they delay. This is an area which should be explored.—*Warren H. Cole, M.D.* professor of surgery, University of Illinois College of Medicine, Chicago, and retiring president, American Cancer Society.

Report on Statistical Breakdown Of Malignant Tumor Cases

The Tumor Registry of the New York Medical College contains records of 4,112 malignant tumor cases diagnosed and treated during 1950-58. Virtually all patients were white (97 percent); 40 percent were male, 60 percent female.

Malignancies of digestive organs and breast constituted 50 percent of all the cases during this period (30 and 20 percent, respectively), with cancers of the female genital organs and of the respiratory system another 23 percent (14 and 9 percent, respectively). Almost two out of every five male cases were in the digestive organs, and one out of every five was in the respiratory system. One-sixth of all male cases (17 percent) had carcinoma of the lung and bronchus, and almost one-third had cancer of the large intestine, rectum, or stomach.

Similarly, one-third of all the female cases had cancer of the breast, and an additional 50 percent were almost equally divided between cancers of the digestive and female genital organs, 25 and 23 percent, respectively.

Proportionally, more women than men fell victim to cancer below the age of 60; thereafter, male cancers predominated. While only 16 percent of all male cancers occurred between the ages of 30-49, about 32 percent of all female malignancies were in that age group. On the other hand, 52 percent of all male cases occurred at age 60 and over, as compared with 36 percent of all female cases in the older group.

The higher proportion of female cases below 60 years is due principally to the occurrence of cancer of the breast and female genital organs. More than three out of every four female breast cancers, and two out of every three malignancies of the female genital organs, were diagnosed prior to age 60. Contrariwise, two out of every three cases of carcinoma of the male genital organs were diagnosed at 60 years or older.

Of the 4,112 carcinomas, a total of 390 (9.5 percent) were multiple primaries presented by 189 patients (178 had two malignancies, 10 had three, and one had four primaries). More than twice as many females as males had multiple primaries. The rate of multiple primaries among all cancer cases ranged from a low of 14 per thousand for those whose first primary was cancer of the male genital organs, to highs of 131 and 74 per thousand for those whose first primary site was skin and breast, respectively.

Using the actuarial method of computing survival rates, the over-all five-year survival rate is 37 percent, and separately by sex, 45 percent for females and 26 percent for male cases. The importance of early diagnosis is emphasized by the five-year survival of more than twice as many persons treated while the disease was localized as compared with those treated after it was diagnosed with regional involvement—64 percent versus 30 percent, respectively. Of those with distant metastases at the time of original diagnosis, only five percent survived five years.

The five-year survival figures by major site groups ranged from a high of 61 percent for breast cases, to virtually none for lung and bronchus malignancies.—*Walter L. Mersheimer, M.D.*, coordinator, cancer education program, New York Medical College, and *Abraham Ringely* and *John Varadi*, American Cancer Society, New York City.

"What's unusual about it? He's in cancer research."

CHICAGO HOSPITAL COUNCIL: *Purchase of*

Favorable experiences with the purchase of outside services to handle part of the business office operation, the food service, and housekeeping were reported by three Chicago-area administrators at the October 26 meeting of the Chicago Hospital Council. Abstracts of their talks follow.

Business Office Services:

An outside service does part of our business office operation—our hospital statistics and our payroll. It began doing the statistics on August 1 and the payroll on October 1.

Personnel problems led us to discuss using outside services about two years ago. Our turnover was tremendous. Also, in our particular locality we do not have a very large labor pool. Most potential employees lack knowledge of hospitals and do not know how to use the NCR machine. Therefore the persons we were hiring had to be trained to use the equipment, and this took a great deal of time.

Another reason for considering outside services was the limited amount of space available for the department. Lack of space led to another problem—lack of privacy when the payroll was being run off. There was a great deal of tension in the office—much of it probably caused by the tight quarters and lack of privacy. Furthermore, because the payroll and accounts payable were done on the same machine, we had a problem of scheduling.

Because we thought hospital statistics would be the easiest thing to turn over to an outside firm, we started with that. The consultant from the service company* came in and worked with the medical record librarian on statistics, and with the comptroller on the payroll.

By having the payroll done outside, we estimated we might save two to three days time of the payroll clerk, during which she might do things that had been neglected before or might be trained on the ledger and fund account to help our bookkeeper, who was being saddled with more and more duties.

Vacation schedules are automatically tagged; W-2 forms and quarterly social security reports are filed. Machines are more accurate, and they don't get sick. Use of the outside service may save us from having to add business-office personnel in the future.

A principal disadvantage, at least until we get the program well under way, is the extra expense. As the number of names on the payroll increases, the unit charge will decrease. Transportation of the material to the service is not a problem for us, though it might be for another hospital. Our consultant lives near the hospital. He picks up the work in the morning and drops it off on his way home.

Editing of the payroll is of course still a function of the hospital. Employees are still paid on the same dates—the 7th and the 27th.

We have discussed the possibility of having the company do our accounts payable, general ledger work, and inventory control. Work which is on a periodic basis lends itself to this sort of arrangement. —*Ernest C. Gray,* administrator, Lake Forest (Ill.) Hospital.

Food Service:

The Highland Park Hospital has been using an outside food service for six years. When I came to the hospital a year and a half ago, I was all set to do battle with the system, because in my education I had been advised against outside services. Also, though I had had no direct experience with the use of an outside food service, I had known of some such services in the East, which were not very satisfactory.

When I approached the board with my objections, I learned that the dietary service had been substandard before this arrangement was made. A dietitian could not be recruited. Dietary expense was running over 13 percent of the total budget.

Now, on the basis of my own observations in the last year and a half, I am sold on the system. Our raw food cost is less today than it was when the hospital entered this agreement. The percentage of dietary expense in the total budget has been reduced to about 11 percent.

I haven't received five complaints about the food

*Middle West Service Co., Chicago.

Business Office Services,

Food Service,

Housekeeping Service

in the time I've been there. We bring local service clubs into the hospital to eat, and some of the members would like to eat there every week.

I don't have to worry about any interruptions in service. When the dietitian quit, the next day the service had another dietitian on the job.

The hospital pays a managerial fee, for which the service** brings in a chef-manager, a dietitian, and an assistant chef-manager, who are on its payroll. The chef-manager supervises the cooking and the personnel, leaving the dietitian free for doing therapeutic diets, visiting with patients, and other things we think a dietitian should do.

Invoices for food purchases are approved by the chef-manager and paid by the service. The hospital then pays the service on presentation of the original invoice.—*Frank I. Schwerwin,* administrator, Highland Park (Ill.) Hospital.

Housekeeping Services:

Four years ago, because we were receiving many requests from department heads and nursing supervisors for additional personnel to perform housekeeping duties, we decided to make an analysis of the housekeeping department.

We found a real personnel problem. Inservice training programs for housekeeping personnel had broken down. There was a tremendous turnover.

The executive housekeeper was overburdened with detail; so we decided first to hire an assistant for her. However, the situation did not improve. Both were persons who could not delegate responsibility. At the same time, supervisors—perhaps because of a lack of a good example at the top—were not doing the quality of supervision needed.

When we were unsuccessful in finding a capable housekeeper, we investigated outside contracting, and finally decided on a firm that does the cleaning for many office buildings in downtown Chicago.

In the contract signed in July, 1957, the firm was made responsible for all supervision and for cleaning all areas within the hospital. At the outset, it was agreed that the contract firm would assume on its staff all of the hospital's housekeeping personnel (about 40) and train them in its procedures. If after reasonable time the firm believed it could not train these persons, it could replace them with employees of its own choosing.

The hospital appointed a housekeeping coordinator, a Sister. It was agreed that the company could not hire additional employees or authorize overtime without obtaining prior approval from the coordinator. We had been concerned about the possible loss of control over employees. Through the use of our coordinator, however, any problems have been worked out nicely at the supervisory level.

Increase in cost was another problem. Of course the firm had to pay the minimum wage, and salary cost was raised anywhere from 20 to 40 cents an hour. In 1956 the direct cost of salaries and supplies being used in the department was about 72 cents a day; in 1959 it was $1.55. But merely to compare does not give a true picture. We have increased the responsibilities of the housekeeping department. For instance, it is now cleaning venetian blinds and putting up and taking down screens, which it didn't do in 1956. Also, the cleaning of surgery is now the responsibility of housekeeping. It used to be done by a man hired for that purpose (not in the housekeeping department).

Better sanitation unquestionably has been achieved. We now get nothing but compliments on the areas on which we used to get complaints.

One possible disadvantage is the chance of involvement in labor disputes. This firm used both union and non-union employees, depending on the building being cleaned. Some months ago two employees working in our hospital were released for justifiable reasons. The employees appealed to the union. The NLRB recently ordered the firm to reinstate them and pay them back wages. The hospital did not get into the dispute, but it has told the company it will not pay any portion of the back wages.—*Robert Schinderle,* assistant director, Mercy Hospital, Chicago.

**Cooper Industrial Food Service, Chicago.

Construction of Atomedic "Dream" Hospital To Begin Next Year

A 24-bed circular hospital, to be built at the cost of $5,000 a bed, is the dream of pediatric surgeon Hugh C. MacGuire, M.D., originator of the Atomedic concept.* Translation of the dream into reality will begin early in 1961, when construction is started on the first prototype of the Atomedic hospital, at the Atomedic Research Center in Montgomery, Ala.

The atomic-age hospital will be equipped with electronic transducers for recording blood pressure, pulse rate, and other measurements automatically. This equipment will permit a complete physical examination to be made in less than a minute. The information will be fed into a central computing center, where a mechanized record of the patient's health can be charted from birth to death.

Use of the electronic recording equipment will enable doctors to give better diagnoses than they now can, Dr. MacGuire declares, because they will be able to consider the whole patient at one time.

In a speech before the annual meeting of the American Surgical Trade Association in Chicago, Dr. MacGuire invited manufacturers of hospital equipment and supplies to cooperate in the development of his concept by giving some of their products for the prototype. The center already has commitments from the American Telephone and Telegraph Co. to supply communications facilities and know-how, and from the Aluminum Corp. of America to furnish materials for construction.

*See "The Hospital of Tomorrow," in the April, 1960 issue of THE HOSPITAL DIGEST, for a description of the Atomedic concept.—ED.

Hugh C. MacGuire, M.D., exponent of the Atomedic Hospital, uses a pointer to emphasize features of the circular "hospital of the future" at the Inter-Industry luncheon given during the convention of the American Surgical Trade Association.

The Atomic concept, backed by physicians, can avoid socialized medicine, Dr. MacGuire said. He foresees a voluntary subscription plan which would provide complete medical care for about $4 a year per person.

The circular hospital, about 100 feet in diameter, will have a large working area in the center. The patients' rooms will be individual units, "like 24 pieces of pie," says Dr. MacGuire, coupled together like train cars around the working area. Each unit will be expandable to care for a maximum of four persons. The multipurpose bed may serve as a commode, a bathtub, or an operating-room table.

A second bed will be available which can be pulled down from one wall of the room, and in an emergency one additional bed could be placed inside the working area and another just outside the patient's room in the corridor which will go all around the hospital.

There will be heating elements in the walls of the room, so that the patient's food could be prepared there. Each patient will be monitored not only by electronic devices but by color television.

For surgery, the patient's bed will be wheeled out into the center area, and the patient will be covered with a plastic bag. The center area will also be used as a delivery room. The patient's bed will be wheeled to a designated spot, and instrument tables and other equipment can be brought up through the floor.

Underneath the hospital will be equipment for atomic sterilization of supplies. Surgical tools probably will be handled on a replacement basis.

Not only will this prepackaged assembly hospital cost far less to build, but it will require a ratio of only 3/4 of one person per bed to care for patients, Dr. MacGuire says.

Dr. MacGuire sees in the Atomedic hospital a solution to the high costs of medical education. He envisions a return to the preceptorship method. A student applying for medical school would come to the community hospital, apply to one of its physicians, and learn while he is working and helping the practicing physicians. Nurses and technicians can be trained in similar fashion, he believes.

It will take 50,000 such hospitals to care for the hospital needs of the United States, Dr. MacGuire estimates.

The pediatric surgeon, when he went to Montgomery, wanted to build a pediatric hospital. Irritated by the many regulations for construction, he became interested in developing a new type of hospital. He says architects for present-day hospitals are building monuments to themselves, and declares that one of the greatest drawbacks to the medical system is "Hill-Burtonism."

An Alabama state law enacted especially for Atomedics exempts the center from meeting the construction requirements for hospital facilities.

Consultant's Corner

By John G. Steinle

Q. Our over-all autopsy rate is 55 percent. Eight deaths were charged to the surgical service with one autopsy for a 16 percent autopsy rate last month. The "surgical" deaths show five of them to be terminal cancer admitted by the family doctor on the medical service; but because cancer is listed, according to our record librarian and her association, as a chargeable death to surgery, she placed all of the deaths against the surgical service. Right now, we have a patient who had her uterus removed two years ago by a gynecologist because of cancer. Her present admission is for terminal cancer of the bowel. She was admitted to a medical floor by the family physician who is a general practitioner. A consultation has been held with qualified surgeons and it has been deemed that she is inoperable. When she expires, should this case be charged to gynecology, surgery, or medicine? Each chief of service is jealous of his departmental autopsy percentage. How should deaths and autopsies be classified as to service?

A. Your over-all autopsy rate is something in which you can take pride but, as you point out, when this is narrowed down to services misleading statistical results show up. Carried to absurdity, a hospital's dermatology or eye service might have one death and one autopsy for a 100 percent record, while on the medical service there might be fifty deaths with twenty-five autopsies. To contend that the first service is twice as good as the second in getting autopsy permissions is ridiculous.

The way in which the surgical deaths you cited were classified might be explained on the basis that the record librarian doesn't like the chief of surgery and is trying to make him look bad.

In many hospitals the "gross appraisal of the efficiency of the hospital and medical staff" is done (as explained on page 327 of *Manual for Medical Record Librarians*) on the basis of final diagnoses, and this is really the only way to do it when the hospital is not organized into definite clinical services. However, many people believe that more meaningful figures are derived when discharged patients are classified by the service in which they were treated, especially when there are definite services organized, with chiefs and with residents. One hospital I know keeps figures in two ways: one by final diagnosis and one by the status of the physician in charge (whether his appointment had been to the surgical service, the medical service, the urology service, etc).

As defined in the *Manual*, where assignment is on a final diagnosis basis, *medicine* includes "all diseases and conditions treated by the administration of internal remedies except those which are assigned to a sub-specialty." *Surgery* includes "all diseases and conditions treated by manual or mechanical means except those which are assigned to a sub-specialty." Thus, it would seem that the "surgical" terminal cancer death should have been classified under "medicine," unless a special oncology classification exists. I have never heard of automatically placing all cancer cases under surgery since even when cases are classified by final diagnosis the site of the neoplasm will often determine the service.

This whole matter of service assignment constitutes a problem for many medical record librarians. I understand that a conference may soon be called by the American Hospital Association with representatives from the American Association of Medical Record Librarians, the American Medical Association, the Joint Commission on Accreditation of Hospitals, the United States Public Health Service, and others, to promote the use of uniform definitions in gathering hospital statistics. I am sure that this particuar problem will be discussed and probably resolved.

Q. For a hospital with 180 members on the medical staff what doctor in-and-out register system do you recommend?

A. For a hospital with a staff in excess of 150 physicians an electronic memory device is recommended. It is less expensive and provides a much better service. In this system, a physician punches a number which records in a central control device in the PBX equipment room. When the switchboard operator wants to determine whether or not the physician is in the hospital, she presses the number and receives a visual and/or audio signal indicating "in" or "out." If there is a message for the staff member, a signal can be activated which continuously flashes the physician's identification number.

Outpatient Pastoral

By Richard K. Young

Pastoral counseling is regarded as a religious process in which the individual is helped to realize more nearly the full potential of his own personality. The pastor-counselor works with the same set of facts in the personality background as other professional persons, with special emphasis upon relating these experiences to the individual's fellowmen and to God. Yet a real dilemma faces the modern hospital chaplain in deciding what to do with requests to counsel those people who are not hospitalized.

The authors have surveyed the religious needs of a number of hospitals during the past few years. In each instance the chaplain expressed concern over the demand for office counseling. Internists, psychiatrists, nursing supervisors, the personnel director, and pastors in the community who get to know the chaplain and his work will inevitably make such requests. But one chaplain in a hospital of two- to three-hundred beds obviously cannot accept a very heavy counseling load if he is to minister adequately to patients on the hospital floor.

The administrator and the chaplain will handle the demand for office counseling in one of three ways: by ignoring the demand and restricting the chaplain's work to inpatient care; by designating a certain number of hours of the chaplain's time for office counseling; or, ideally in our opinion, by the establishment of an outpatient counseling service.

The creation of such a service, operating as a part of the chaplain's department, can prove useful both to the hospital itself and to the community it seeks to serve.

The North Carolina Baptist Hospital, a 450-bed teaching hospital with an outpatient department, has sponsored an outpatient pastoral counseling service for the past seven years. During that time the use of the service has grown from 1,621 visits in 1953 to 4,923 visits last year. Housed in a suite of seven consultation rooms and a reception area within the hospital's outpatient building, the counseling service is administered under the Department of Pastoral Care.

A wide variety of problems is brought to the service, ranging all the way from obvious mental illness to uncertainty in the choice of a vocation. More than a third of the requests are for marital counseling.

The relationship of the service to other departments and agencies is a broad one, as these recent experiences in the center show:

The outpatient urology clinic referred for counseling a 70-year-old man who was upset because of the necessity of having prostatic surgery. In talking with the chaplain the patient disclosed that he had been living with a daughter and son-in-law ever since his wife died five years before. He was quite hostile toward his daughter. The patient was subsequently hospitalized for surgery during which time the daughter made five visits to the center for counseling. She seemed to gain a better understanding of her father's feelings as well as her own.

A student nurse was referred by her faculty-advisor

Outpatient counseling is a natural outgrowth of close collaboration between chaplain, doctor, and nurse. Here chaplain George Colgin confers with a nursing supervisor and a medical resident.

*Both of the Department of Pastoral Care, North Carolina Baptist Hospitals, Inc., Winston-Salem.

Counseling

and Albert L. Meiburg*

Chaplain counselors meet in regular staff conferences as a part of their training. Dr. Young is directing this meeting.

in the school of nursing. Although her intelligence score in the school's testing program was high, she was doing poorly in her clinical work. Her problem centered around her resistance toward authority, and first became evident in her relationship to several of her nursing supervisors. During the course of nine counseling interviews she came to see how her responses were stemming from her earlier feelings toward a very demanding mother. She worked on this problem and her floor work improved to a marked degree.

The psychiatric service recommended counseling to a couple whose anxiety was related primarily to a marital problem. The wife was an active member of a rather rigid religious sect, and religion was an area of acute conflict in the home. The husband's parents had been unusually strict in their adherence to religious practices with the result that the husband failed to understand his wife's religious faith. As a result of a joint approach of psychiatric treatment and religious counseling, the wife became less compulsive in her use of religion and the husband's tolerance toward religion was increased.

Pastoral counseling can give valuable aid to many people. Chaplain Benjamin Patrick, who is associate director of the outpatient counseling service, talks with a man who has come to the center for advice.

A pastor brought to the center an attractive 45-year-old woman from his parish. She complained of not being able to feel "close" to God. Her prayers seemed unreal. Yet she was not conscious of any specific sin or guilt in her life. As a matter of fact, she said, "Everything outwardly seems fine." Her local doctor had said she was in good physical health. Her husband was a highly successful businessman. They had three lovely children. Her religious concerns were obviously symptomatic, so the chaplain encouraged her to accept psychiatric help, explaining that emotional disturbances often reflect themselves in a person's religious outlook.

The 16 ordained ministers on the counseling staff include six permanent staff members and ten counselors in training on one or two year residencies. Trainees are selected on the basis of interviews and psychological examinations and must have completed basic theological preparation (B.D. degree). Counselors function in their role as ministers, but ministers with special training and experience in understanding human behavior. Special emphasis is placed on the application of spiritual resources to human needs, with the constant recognition that knowledge gained from allied fields is used by the minister only as a tool in making his ministry more effective.

When a person comes for the first appointment and before he is assigned to a counselor, he is seen briefly by the chaplain in charge of outpatient counseling for the purpose of screening. Counseling interviews are approximately 50 minutes in length and are usually scheduled one week apart. Toward the end of the counseling relationship, appointments are spaced further apart. A recent survey showed that the average number of interviews per counselee was seven. Approximately 10 percent of those seen are evaluated and referred to other sources of help. About the same proportion are seen for as many as 15 to 20 interviews.

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Dr. Richard K. Young, director of pastoral care.

No fees are charged for the counseling. However, at the conclusion of counseling many persons make contributions toward the support of the service. It is the policy of the center not to accept such contributions until the counseling process is terminated.

The geographical area served by the center corresponds roughly to the area from which the hospital's inpatients are drawn. Approximately half of those who use the service reside outside the county.

Within the hospital itself, the use of a pastoral counseling service can be quite valuable. For example, administrators and personnel directors are always concerned about the rate of turnover in hospital personnel. The training of staff is expensive and it is well known that interpersonal clashes among personnel account for a part of employee dissatisfaction. The counseling service is not identified with the administrative side of the institution, and thus the chaplain's relationship to the employee is not colored by the "hiring and firing" aspects of the person's problems. Almost invariably the chaplain will be asked to hear personal grievances and an established service enables a more thorough job to be done with each situation.

Commenting on the role of counseling in employee efficiency, assistant administrator Reuben Graham of North Carolina Baptist Hospital says, "Hospitals – particularly those considered in the large category – are as vulnerable to knotty personnel difficulties as any industry. For example, there is the ordinary explosion where a department is torn apart by personal frictions, gossip, or some other unbalance. When people work closely, under trying circumstances and perhaps fatigue, this is an expected reaction. On many occasions, when a chaplain is asked to sit in on these discussions a settlement develops much quicker and personal feelings are smoothed in a more satisfactory manner.

"Then there is a case where theft, addiction, or some other accusation has been directed toward an employee," Mr. Graham continued. "In many instances, evidence is nonexistent or partly circumstantial. Situations of this sort demand as honest a verdict as can be found, and the help of the chaplain through private interviews is extremely beneficial to the administrator when he must decide for or against an employee. In none of these cases does the employee necessarily feel that the chaplain is either the 'knight protector' or 'on the side of administration'."

A second contribution that a counseling service can make to the hospital is as an aid in the guidance of student nurses. Most hospitals with a chaplain use him as a teacher of religion in the school of nursing. Here again, there usually develops a pastoral relationship and consequently there are requests for personal conferences.

"The chaplains play a great part in the counseling and guidance program for our student nurses," states Joyce Warren, R.N., director of the school of nursing and nursing service. "Our admissions committee selects girls who believe have tht qualifications to become professional nurses. However," she explains, "many times we find the students with high potentials have difficulty with theory or clinical performance. The chaplain who has no disciplinary responsibility over the student is often able to help her see what is hindering her from performing to her capacity. The chaplain has helped many of our students find their difficulty, and they have made successful nurses.

"There are always a few girls who make a wrong choice and who need to change their career but do not know how to face the problem of change. The chaplain is able to assist these students and guide them into choosing a career more suitable for them. Before a student leaves our school—either by her choice or by decision of the faculty—she has an opportunity to talk with a chaplain who tries to guide her into selecting a career where she will be happy and can serve best."

Over and above its assistance to hospital personnel, an outpatient counseling service can be a valuable community resource. It is a commonly accepted medical opinion today that emotional and spiritual disturbances do manifest themselves in bodily malfunctions. Consequently, it is conceivable that the provision of counseling for selected individuals at the proper time could be understood as a form of preventive medicine. As Reid T. Holmes, administrator of Baptist Hospital, says: "Every community hospital should seek to provide leadership and resources to improve the health of its public. Pastoral counseling is now a proven aid to patients and doctors in their search for health mentally, spiritually, and physically. The presence of this valuable service in the North Carolina Baptist Hospital has lent much to improvement and progess in all directions."

More and more the parish minister is finding his place on the community health team. Yet, unlike the physician who can refer puzzling cases to a teaching or research center, the local minister has practically nowhere to send those whom he feels unable to help because of a lack of time or training. A pastoral counseling service in a local hospital can help to meet this need.

For example, take the problem of the early recognition of mental illness. For a number of years now the mental health associations have been coaching ministers to become alert to the symptoms of emotional

disturbance, since unhappy individuals often consult their minister early in their distress. However, the minister is often reluctant to suggest psychiatric help to a person who may be offended. A counselor in a religious counseling center in a hospital, on the other hand, is less vulnerable to any feelings of resentment the person may have and can often effect a referral with relative ease.

The hospital symbolizes the forces of healing in a community. In addition, it is a meeting-ground for the practical labors of the various professions. Thus the hospital is a natural setting for pastoral counseling which at times may reach individuals not being helped by present methods of healing. Smaller communities which feel the need for counseling services but are not sure how to go about their establishment will often find that under proper leadership the civic clubs and service agencies of the average community can be enlisted to help support the addition of such a service to their local hospital, especially if the local chairman has won the community's respect. And the counselees themselves (718 last year at North Carolina Baptist Hospital) create a significant amount of good will for the hospital.

The Chaplaincy and Public Relations

By John H. Brennecke*

Too little, it seems to me, is said these days about another of the many roles played by the institutional chaplain. Among his other duties, the institutional chaplain is pastor to both patient and staff-member; he is director of chapel services (if such are available); the counselor to many more than the confidences of his office will permit him to describe; and in addition he is the liaison person between affiliated bodies, both religious and welfare.

Now, in setting forth these ideas I certainly do not set myself up as the expert in the field – far from it. However, just from the little experience that has been mine, I feel that there is something to be said, and I'd like to say it.

What are the liaison relationships with which the chaplain of a hospital is involved? First, of course, are the churches in the city or community. As a Protestant minister, I have no right to attempt to be a priest to a Catholic or a rabbi to a Jew. As a Protestant minister, with our special emphasis on the priesthood of all believers, I do have the right to be a pastor to the Protestant constituency of our hospital. However, here is where the matter of public relations enters into the picture in a big way.

The chaplain is the pastor of the hospital; this is usually the undisputed situation. However, there is no substitute (and every hospital chaplain ought to concur in this) for the familiar face of the patient's own personal pastor. At least, for the sake of public relations, professional comity, and out of consideration for the individuals involved, the chaplain ought to make the effort to apprise the pastor of his parishioner's presence in the hospital. This would be the commonly courteous thing to do.

However, in a city of as much flux as Chicago, we find that many, many persons upon moving here will fail to reestablish church connections. Though upon admission they may fill in the blank marked "Religion," with "Protestant," they may actually not have attended church since their coming to the city. After the initial contact is made, the chaplain, upon being informed of something like the above situation, can subtly suggest that he would be glad to offer his services as that person's pastor for the duration of his hospital stay. Often, as I've experienced it myself, these connections will continue in various ways after the patient's release.

The pastor can be notified in many ways. Usually, if the patient has church ties his family will have noti-

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*Chaplain-emeritus, Bethany Hospital, Chicago.

fied the pastor of that person's admission to the hospital. More and more the hospitals are recognizing the place of the pastor on the "healing team," if mention may be made of a much-hackneyed phrase! The clergy are being allowed fairly free run of the patient's room.

This is, of course, not to dispense with rules set up for expediency and efficiency. But I have found relations with patients' pastors to be well-cemented by informing them that they may feel free to call on their parishioners at any time in the afternoon; this has been, of course, with the approval of the administration. A card to the pastor, if the chaplain has time and facilities, will be much appreciated. If, as in my case, the hospital is fairly small, personal phone calls do the job nicely, adding that personal touch, the value of which you cannot laugh off.

In the case of patients of Roman or Orthodox Catholic persuasion, I have a fairly simple habit of telling the patient that I am a Protestant minister (after introducing myself as the chaplain of the hospital) and that, although I cannot be a priest to them, all that they need do is ask, and I can phone the priest for them at any time. In our case, we have an arrangement with the parish church and one of three priests will come at our call.

The relations with these groups usually work out well if consideration of personal convictions and practices are remembered. We keep the Holy Communion sets for the priests in a side cupboard, and they have only to ask for them. In a predominantly Catholic neighborhood such as our hospital serves, the relationships with the Catholic clergy are best kept positive. For the most part we do keep them positive, as the priests respect and recognize the position of the Protestant clergyman in a hospital.

The offer to call in their own particular clergyman, or one of that faith, is made to all patients, even those who signify no religion on their admissions blank. This latter case occasionally meets with some repercussions, but usually the patient graciously informs me that he doesn't go to church.

It is the custom in our hospital for the chaplain to prepare a weekly *Sunday bulletin*, with an inspirational cover and a sermonette of what we hope is an equal amount of inspiration. These are some of our best public relations tools. They serve only one primary purpose: to bring the meaning of the Christian religion to them as any Protestant worshipper would receive it Sunday after Sunday in his own church. Quite often patients have asked that they be put on a mailing list to continue receiving the bulletins which, unfortunately, isn't always possible.

In his work the chaplain meets all kinds of persons. He has to be able to work cooperatively with all members of the staff and administration. Not infrequently, he will find that his ministrations are sought after by staff members as much as by patients. It is the chaplain's duty to remain, first, a pastor. He is not a physician, no matter how much clinical training he has taken and no matter how much he reads the medical journals. Patients frequently ask the chaplain for information as to their own progress. Often the chaplain knows, since in our hospital the progress charts are available to him if he is interested. The realization that it is not his business to diagnose, prescribe, or inform will keep the chaplain out of trouble with the medical staff. However, it is not always the easiest thing to do.

The relations with the medical staff are interesting, if not often hilariously funny! Usually the medical staff is sympathetic to the work of the hospital's own chaplain, especially if he meets with them at staff meetings. Occasionally there are situations where kid-glove handling is the order of the day. The chaplain ought to recognize his limitations and help the patient to place his trust in the doctor's skills. Often a little discussion of how he believes God uses men – such as doctors – will get the chaplain off the hook when a patient confronts him with faith healing or something equally touchy.

If, as in our case, the hospital is a private, denominational institution, there is another link in the chaplain's chain of connections: the denominational board or governing body. They are interested in the progress of their protege, and often no one around the hospital takes the trouble to keep the home board informed. Fortunately, this is not the case with our hospital. Yet there is a subtle temptation to overlook the sponsoring bodies when matters of public relations are discussed.

The general, healthy public doesn't meet the chaplain in too many situations. There are occasions, however, when he will be invited to speak to groups and gatherings of greater or lesser interest. This is his chance to be a public relations man *par excellence*. This is the occasion for him to help the hospital to reach the too-often uninformed public with just what it is that the hospital is trying to do, what it offers, *and what it needs*. This is, of course, no time to grind personal axes. But if the chaplain has any way at all with words he can establish good working relations with the general public, especially since they have envinced enough interest in him and the hospital to have invited him to speak in the first place.

Last, there is the very important area of good public relations among the staff and administration. The staff meetings afford the chaplain the opportunity to hear the gripes, needs, views, and prevailing conditions, and to sense possible underlying problems. As long as hospitals the country over are seeing the efficacy, more and more, of employing full-time chaplains, then they ought to be considered as part of the staff, allowed full staff privileges, and be allowed to help wherein and wherever they are needed and able to do so.

Why is public relations considered an important area for the hospital clergyman? Because his Christian convictions have taught him appreciation for the importance of good working relations with his fellowmen. Jesus taught that no good work can be done so long as any kind of hard feelings exist. Understanding, forgiveness, kindness, sympathetic treatment, good judgment – these are more than simply good public relations attitudes. They are part and parcel of the whole Christian message.

The Technic of the Predetermined Cost

By Alfred R. Kurtz, B.S., M.B.A.*

A thorough knowledge of costs is necessary to give hospitalized patients the best possible medical care under the most economical financial structure. The process of cost finding is only a first step in obtaining statistical and financial data for improving managerial efficiency and effectiveness. A second step – and a far superior one – is the use of the predetermined or standard cost. With this technic costs are known before, rather than after, the fact – a situation which permits early decisions to avoid crises.

Predetermined cost information is helpful not only in measuring and controlling managerial efficiency, but also in establishing sound hospital rates. In hospitals where such information has been available, the differences in costs among the various types of cases has been clearly demonstrated. Under the cost-finding technic alone some of the revenue-producing areas would have shown a loss by the end of the fiscal period because the information was not available until after the fact.

These predetermined costs also point out very emphatically that some charges for service do not cover the expenses of providing particular types of care. If charges are related to costs, hospitals must change their present policies and consider establishing different rates for specific types of care. In essence, such limited policies are already in effect since most hospitals have separate charges for the use of intensive care units, recovery rooms, and labor rooms. Blue Cross also has recognized this, and has established different rates for maternity care as compared to other types of cases. Thus hospitals must take only a small step forward to base all charges on predetermined costs.

Are there any sound reasons why hospitals continue to use an average unit rate for similar accommodations without regard to the costs incurred for providing a particular kind of service? For instance, General Motors produces several makes of cars – and charges accordingly. They do not average the prices for different models and body types of one make of car. Yet hospitals do exactly this type of averaging in charging all patients according to accommodations and not according to type of care as well. With a good predetermined cost system, more financial information will be available to establish future charges for patients based on cost.

Before a predetermined cost system can operate effectively, certain prerequisites are necessary. In general accounting procedures, the accrual basis – whereby revenue is recorded when earned and expenses when incurred – must be adopted. An excellent organization plan with established cost centers is of prime importance if management expects to hold department heads and supervisors accountable and responsible for costs.

As with any new system or procedure, a cost accounting program must start with the proper training of, and acceptancy by, boards, administration, department heads, and supervisors. The purchasing agent plays an important part in securing the best quality of materials at the lowest price consistent with standardization and good service. The personnel officer plays an equally important role in securing the employees best fitted for a particular task. However, the board and administration must assist department heads and supervisors, just as the latter must train and guide employees to use materials and labor more effectively. This assistance and guidance mark the beginning of a cost program.

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*Principal, John G. Steinle & Associates, Garden City, N. Y.

Because a predetermined cost is available currently, and a rate is set for each element of cost (material, labor, and overhead), this system is superior to relying solely on past experience. Of course, the predetermined rate must be based on expected annual costs, which are determined initially by past experience coupled with future anticipated changes. Hence occasional revision of the rates is needed; generally rates are reviewed annually.

Before describing how the system operates, it is well to remember that one of the most important features of the predetermined rate is that it will show current costs. Another significant feature is that these rates will assist the board and administration to control the efficiency and effectiveness of department heads and supervisors and since one of the deterrents to adopting any cost system is the clerical expense involved, administration should be cognizant of the fact that such expense is substantially reduced with the use of a predetermined rate or standard cost system.

By adopting predetermined material rates of standard costs to purchases and issuances, price and quantity variances can be accumulated. Responsibility for variance from standard can be pinpointed to the purchasing agent buying the material or the department head using the material. Any significant variance should be investigated to determine the cause.

When the material is received and placed in the storeroom or delivered directly to the department, the predetermined material rate is charged to inventory, or to the department, respectively. If placed in the storeroom, the same predetermined material rate is charged to the department when the material is issued from inventory.

Differences in price from the standard are traced directly to the purchasing agent. As for quantity variance, this results from material usage, either more or less than the predetermined standard, and may also be traced to the purchasing agent since the agent may buy inferior quality to remain within a relatively narrow range of the standard in order to show a small price variance, or even a favorable price variance. More material then may be used to accomplish a particular task, thereby increasing the quantity or usage variance.

Price or quantity variances for labor may be calculated as easily as material variances if standard rates and times are used. A set wage rate is established for every job classification, giving consideration to various factors which might affect the rate. When an employee is hired and assigned to a position, the predetermined labor rate is charged to the department. Differences in the actual and predetermined labor rates are charged to a labor price variance account and become the responsibility of the personnel officer's control.

Quantity variances result from labor usage, either more or less than standard. Improper screening of new employees to maintain the predetermined rate or to show a favorable variance may affect the quantity of labor used. For instance, the quality of new employees, because of a change in the labor market price structure, may differ from the quality of those replaced, and this would show up in the quantity variance for labor. However, the variance could be analyzed and the result trace to the effectiveness of the personnel department.

Although it may be more difficult to establish definite time standards for various tasks because of the human element involved, it is not impossible and has frequently been done with great success. In fact, many hospital tasks are routine in nature and standards can be applied readily. How many administrators are already aware of production standards for laundry, housekeeping, and maintenance functions; of time standards for a radiologist to read and a technician to take a film for every type of examination; of nursing standards for the average number of patients cared for per nurse; or of the many clerical standards used for years in industry? With a knowledge of these standards, setting a predetermined labor time rate is simple.

Standard overhead rates had their origin long before material and labor rates. From standard overhead rates, budget and capacity variances are calculated. Overhead budget variances are similar to the price variances of the two other elements of costs. The difference between actual and budget overhead costs – the latter being in essence a predetermined cost – is presumably the responsibility of the department head. Depending upon how overhead expenses are broken down, however, definite responsibility cannot always be established and administration therefore must assume such responsibility for any variances.

Capacity or volume variances are similar to quantity variances for material and labor. Capacity variances arise because the actual volume differs from the estimate. Although this difference is, for the most part, uncontrollable in a hospital, in some instances departments may be held responsible if they fail to keep production or service at standard.

Cost accounting and budgets are so closely related that one cannot exist without the other if any value is expected from one's efforts. Through a standard cost accounting system with predetermined rates, it is possible to develop managerial reports which, when analyzed and properly interpreted, can be used for controlling operations. From this information the results, facts, and trends of services rendered may be ascertained, as may be the effectiveness of methods and supervision. Trends of operating costs can be studied and used to alter future policies to meet circumstances.

Because hospitals have lacked knowledge of cost information in the past, they have been forced to accept reimburseable rates often lower than actual costs. Hospitals may well be advised to contract for actual costs or charges if such costs are closely related to charges. Of course, such contracting for actual costs may only be possible when the accurate knowledge of costs obtained with the predetermined cost system is available. The ultimate aim is an economical structure aiding the best possible patient care.

An unusual time of year for this subject? Not at all, says the author — now is the time for a thorough checkup of all air-conditioning equipment.

Preventive Maintenance for Your Air-Conditioning

By William J. Wren*

Preventive maintenance is to mechanical equipment what preventive medicine is to the human body – the wisest and least expensive way to get the most out of it.

Air-conditioning apparatus is designed to provide years of trouble-free temperature and humidity control. But to give good service it must be properly maintained just like any other mechanical device in laboratories and operating rooms.

A poorly maintained air-conditioning system is uneconomical to operate. Very often the first real load put on it results in a breakdown, causing patients and the staff to suffer needlessly. In contrast, a well-maintained system can outlast its normal life expectancy and perform efficiently year in and year out – a worthy consideration when the total investment is recalled.

The type and success of any preventive maintenance program is the responsibility of the administrator and the chief engineer. It will cost money, but a good program will save substantially more than it costs. For example, a $200 cleaning and paint job can greatly extend the life of a fan unit that may be as expensive as a new Cadillac.

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BUILD PROGRAM STEADILY

There is no simple guide to proper maintenance of the system governing atmospheric conditions in the hospital. Experience and common sense are the best criteria. Operation and maintenance instructions prepared by the manufacturer of the system's components offer detailed guidance. Representatives of the equipment producer can also provide on-the-job training.

Regardless of the type of system, or length of use, maintenance work can be divided into three categories: startup, operation, and shutdown. All are vital, but particular attention should be paid the last.

After a half year's use from spring to fall, each component of the cooling and dehumidification system should be thoroughly checked for wear, dirt, and corrosion. An inspection in late fall or early winter may reveal a need for replacement parts, which can be installed in plenty of time for startup. If left until

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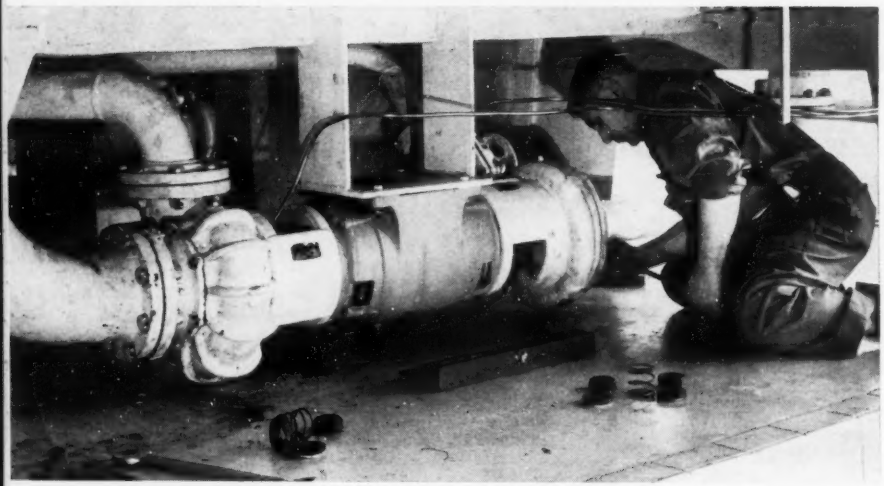
Flexible nozzles in high velocity under-window air handling units are easily kept clog-free with a periodic squeeze.

Lint screens in high velocity induction units should be cleaned periodically, depending on conditions.



Major maintenance work, such as changing the absorber seal on the solution pump of an absorption water chilling machine, should be performed only by qualified personnel. Where none are available, contract with an outside firm to do this work.

spring, an early hot spell can rush the schedule, causing maintenance personnel to miss important check points.

Some central systems run all year. In others, boilers and refrigeration machines may not function during off seasons. Regardless of climate or length of use, air-conditioning equipment should be shut down for a brief period each winter for a yearly inspection.

To establish a routine, break up the program into segments. Window and larger self-contained apparatus can be treated individually. Divide central systems into the major areas of air handling and refrigeration. Consider the cooling tower, water cycles, and electrical control circuits separately.

SELF-CONTAINED EQUIPMENT

Cleanliness is the most important item in maintaining window units. Coils, drip pans, and other components can be kept clean with any all-purpose cleaner. In severe weather, rust may occur on exterior areas. Clean to the bare metal and apply protective material. Inspect the mount to be sure no cracks or openings can admit dirt from the outside, and keep the units free of climbing ivy.

Inspect controls for proper operation and fans for tightness and clearance. Make sure wiring connections are tight. Above all, be certain the unit is receiving the correct voltage. Too much or too little will result in burned-out motors.

Filters, often the most neglected part of any system, must be examined regularly and replaced when dirty, at least once a year. A dirt-clogged filter is a good way to waste money, cut down on unit capacity, and increase cleaning bills.

Larger packaged units are usually installed indoors and do not require extensive preparation for winter shutdown. Periodic maintenance is needed, however, and the fall season is one of the best times to get this done.

Oil fan motor bearings and fan shaft bearings. On ring lubricated bearings, oil must be kept at the overflow level to assure proper lubrication of the fan motor bearings. The sleeve-bearing fan motor should be lubricated with a light oil every three to six months, depending on usage.

HANDLING CENTRAL SYSTEM AIR

Because fans in big systems serving multi-story buildings are designed for year-round use and are seldom shut down for long periods, they should be inspected at regular intervals throughout the year.

The fan wheel and blades must be cleaned of dirt film that otherwise will accumulate, causing unbalance and shortening bearing life. Make sure fans are properly secured to the fan shaft. If blades are rusty, scrape and repaint them. Repaint the fan housing as necessary.

Several surveys and many inspections have proven that more fan shaft bearings are ruined by over-greasing than by under-greasing. Follow the manufacturer's recommendations.

While in the same area, inspect the other air-handling parts such as filters, bearings and motors, belts and gears, and electrical controls. Make sure outside air intakes are free of obstructions, which lower operating efficiency.

Bearing journals should be kept in good condition. Examine fan belts to make sure they run with sufficient tension to avoid slippage (evidenced by belt squeal), and inspect the alignment of motor and fan.

Ducts may require cleaning every five or ten years, depending on use. After scraping and brushing, an industrial vacuum cleaner will remove loosened dirt so that it does not blow into the building on startup. Some administrators prefer to have a cleaning contractor (sometimes listed as a fireproofing engineer) do this work.

Instruments should be checked for response and accuracy. Inspect automatic valves for air leaks, lubrication needs, and sticky stems. Dampers should be examined for lubrication and proper adjustment. Inspect blades in a closed position to be sure all close tightly. Linkage adjustment will correct improper blade position. Trunnion bearings should be coated with light machine oil. Wipe away all surplus oil.

Cooling coils handling water must be given

thorough attention to prevent freeze-up. Positive protection for water coils in the outside air stream can be obtained by removal of all water, with the help of air blown through the tubes (150 cfm at one psig), or by using an anti-freeze solution, such as Ethylene Glycol, acceptable to code and Underwriter authorities.

Coils several rows deep must be cleaned chemically. A recommendation as to the best method of cleaning should be obtained from a qualified water conditioning company. Evaporative condenser coils often become coated with minerals left by water, and can be cleaned satisfactorily only with chemicals. Germicidal agents, such as a water solution of phenol, can be used where such results are required.

UNDER-THE-WINDOW UNITS

Air handling units, which replace radiators and furnish both heating and cooling for peripheral zones, should be cleaned twice a year.

Periodic cleaning of the spray nozzles maintains full capacity and low sound level. Special tools for cleaning nozzles and coils are available from some air-conditioning equipment manufacturers. These are used with a standard vacuum cleaner.

Since the units handle a mixture of air and moisture, they are subject to corrosion. Protect metal surfaces, except the coil, with a corrosion resistant finish. Later, check metal surfaces for rust caused by a breakdown of the protective coating. Clean and repaint all defective areas.

Units with fans and motors generally do not need lubrication as they are equipped with permanently lubricated bearings and couplings at the factory. Remove dust and dirt from fan blades with a hard-bristle brush.

That should take care of the air side or conditioning half of any system. Here are some tips on maintaining machinery supplying cooling and heating.

WATER CHILLING PACKAGES

In large central air-conditioning systems, water chilling machines may be shut down in late fall. If repair work is needed it can conveniently be handled during the months the units are not in use.

First, examine the electric or steam control system. Air gap surfaces on starter contacts should be cleaned. Oil breakers should have tank-lowered contacts checked and oil renewed once a year. Replace machine oil and oil filter, as acids in used oil can cause corrosion if left until spring. Clean condenser tubes.

A definite indication of dirty tubes is a larger than normal difference between leaving condenser water temperature and actual condensing temperature. To use this method a log must be made of temperature difference when the machine is new and operating under full load. Comparisons made later should also be at full load and with identical entering condenser water temperatures.

Cooler tubes should be inspected and cleaned at the end of the first operating season. Their condition at this time will be a guide for future frequency of cleaning (an average of every five years) and should indicate what type of water treatment is necessary.

An accumulation of soft scale or mud will require a complete cleaning with brushes available for the job. Consult a qualified water conditioning firm if hard scale is found.

An open-type centrifugal machine will require an oil change in the high- and low-speed couplings and speed-increasing gear. The couplings should also be examined for alignment and wear. Oil temperature in the reservoir should be maintained at approximately 135°F. during the shutdown period by adjusting the oil heater thermostat or adding auxiliary heat. This will minimize refrigerant absorption by the oil.

(Continued on next page)

Right: Filters, such as these in a large central air-conditioning unit, must be examined regularly and replaced when dirty to prevent lowering unit capacity.

Far right: Manufacturers' representatives instruct customer personnel in the operation of newly installed equipment.

After inspection and maintenance work has been completed, the machine should be thoroughly tested for leaks.

If the machine is in an area where sub-freezing temperatures occur, water must be removed from the oil cooler. To do this, close the water valves, remove the plug in the end of the oil cooler shell and drain all water. It may be desirable to remove the oil charge during shutdown. However, if oil is not removed the oil heater should be left on.

During extended shutdown periods the purge recovery system should be operated as required to keep pressure below atmospheric. This will reduce absorption of refrigerant by the lubricating oil.

ABSORPTION CHILLERS

A high vacuum is essential to efficient absorption machine operation. Check all joints for tightness by pulling a vacuum to an absolute monometer reading of two inches mercury and letting the unit stand for not less than 24 hours. If leakage is indicated, pressurize the machine with nitrogen and a small quantity of refrigerant. Use a leak-detecting instrument or brush a detergent and water over every joint and watch for bubbles.

Remove water boxes and clean tubes as described for centrifugals. Clean moving parts of the automatic capacity control valve. Clean probes and jet pump housing vents in the purge tank.

After the first year of operation, it is wise to take off steam headers for removing dirt that may have gotten into the lines during construction.

Maintenance Check-list

Self-contained apparatus

1. Keep coils, drip pans, and exterior components clean.
2. Be sure the unit is receiving the correct voltage.
3. Replace filters when dirty, at least once a year.
4. Inspect controls for proper operation.

Central systems

1. Give your equipment the best of care through an effective preventive maintenance program, using either your own *qualified* personnel or a maintenance contract with an outside firm.
2. Follow operation and maintenance instructions prepared by the equipment manufacturer, and take advantage of on-the-job training and other courses offered by him.
3. Keep the machine room and equipment clean.
4. Keep daily operating logs that may reveal equipment malfunction before costly damage occurs.
5. Schedule frequent inspection of such components as controls, outlets, reheat coils, filters, fans, and louver dampers.
6. Work up a summer inspection routine and check this with your equipment manufacturer.
7. Obtain an analysis from a local water treatment company. If necessary, use its services.
8. Check parts' lists and decide what replacement items will be needed at startup, and what spares will be needed during the cooling season.
9. Replace parts that may not last the cooling season.
10. Buy the best in the first place; it's usually cheaper in the long run.

COOLING TOWER

In winter protect a tower or evaporative condenser using water by covering the open section at the top with a waterproof tarpaulin. Drain the condenser water pipe circuit and plug the ends to prevent additional oxygen from getting inside and causing rust.

Further freeze-up prevention can be accomplished by circulating non-corrosive and non-volatile antifreeze through the pipes. It is also advisable to disconnect the water make-up line inside the building so that accidental refilling will not occur.

Clean and inspect the inside of the tower or condenser. Examine fan blades for cracks at the blade roots. Check for misalignment of motors and gears in wood towers, which swell and shift with temperature changes.

New, all-steel towers are not seriously affected by temperature and require little protective attention. All critical areas, joints, and the basin, are covered by paint made from a coal-tar derivative which lasts for several years.

Clean out accumulated sludge, removal of which is essential to efficient operation of the cooling system. Inspect drip-deck or spray nozzles to be sure holes are clear. (Newer models have slits in the bottom of distribution arms of the rotating header to eliminate clogging.)

Clean strainers and drain gear oil. Check teeth or ball bearings for signs of wear.

BOILER CARE

Boilers should be prepared for out-of-service periods within 72 hours after the close of the heating season. Remove all combustibles and drain while still warm. Open valves to radiators and other heating elements to permit condensate to drain back into the boiler or feed pump.

Remove manhole and handhole plates and washout plugs. Flush the water side of the boiler's surface with strong water pressure to loosen scale and sediment. Use all washout openings, starting at the lowest point and working toward the top, then flush from the top down.

Open the city-water or make-up valve to flush out the bottom of the boiler, then close the valve tightly. Flush out all boiler accessories and clean contact points of automatic controls. Then inspect thoroughly.

Fire tubes or flues and inside and outside firebox sheets should be scraped clean, and all soot removed from the boiler room. Inspect the boiler carefully for any weakened or corroded places and make re-

(*Continued on page* 60)

Determining Nursing Staffing Patterns for An Intensive Care Unit

Part III: Conclusions and Recommendations

By Edward P. Robinson*

This is the conclusion of a three-part series by the 1960 first-prize winner of TOPICS' *editorial competition for graduate students of hospital administration. Part I appeared in the October issue and dealt with methods of cost analysis and the organization of the pilot study. Part II in November discussed the work-sampling technic and detailed the methodology of the pilot study.*

Interpretation of findings

After the work sample has been completed, it is necessary to analyze it properly to acquire the results of the study.[1]

The first step is to add all the individual tally marks on the work form and total them by element and personnel being studied. These are then transposed to a recap sheet. It is to be noted that day #1 of week #1 was January 18, 1960. There were 68 cycles taken during the period from 7 a.m. to 3:30 p.m. There were eight nursing personnel (four graduate nurses, one practical nurse, two student nurses, and one nurse aide) assigned to this shift. This gives a total of 544 observations (68 cycles times eight observations per cycle). *(See table 1, p. 48.)*

Each of the figures is then totalled and among the subtotals it is found, for instance, that for the first day so much percent direct care was given, so much percent indirect care was given, and so on. The percent for direct care was determined by adding all the tallies for the elements under the direct care category for graduate nurses, which totalled 87, and dividing this by 272 observations. Since there were four graduate nurses observed, the total observations for these four would equal 272 (four graduate nurses times 68 cycles). All categories of the 272 observations (87, 49, 26, 6 and 104) add up to percentages of 100; thus, 272=100 percent.

The total column gives the total number of observations per element and their percentage of occurrence. Thus, by adding all of the observation totals at the bottom (272, 68, 136, 68) across and by adding all the element totals down, the total observation figure of 544 will be the sum. The percentages added down the totals column must come to 100 percent.

Each day's recap for the six-day study period is then totalled on a summary sheet. *(See table 2, p. 49.)* This shows that during the six-day nursing shift 303 cycles were taken, giving 2,156 observations. (Graduate nurse direct care totalled 360 minutes; indirect care totalled 185 minutes, and so on.) There were 828 total observations for graduate nurses. Now all of the figures are available with which to compute the final results of the study.

The desired goal was to attain the nursing staffing patterns necessary for an intensive care unit in the proportion of one graduate or one practical or one student or one nurse aide to give care to a to-be-determined number of patients during each of the three nursing shifts. Thus, it was necessary to reduce the figure of 16 graduate nurses observed, the number of patients being given care, and the figure of six days, to the equation of: One graduate nurse would be necessary to take care of every X number of patients per one 510-minute nursing shift.

The summary sheet of the "Week #1 Day Nursing Shift," *(see table 3, p. 49)* refers to the fact that the day nursing shift was studied and that the nursing service category studied was that of graduate nurses. The shift totalled 510 minutes (i.e., 7 a.m. to 3:30 p.m.).

"Sixteen units" means that during the six-day period of the study, 16 individual graduate nurses were observed.

"Present six out of six days" means that a graduate nurse was observed on each day of the study (it may be noted that the practical nurse sheet shows that practical nurses were in five out of the six study days).

Point "1": this means that graduate nurses were observed 828 times during the six-day study.

(Continued on next page)

*Mr. Robinson is assistant director, Louis A. Weiss Memorial Hospital, Chicago. At the time this article was written he was administrative assistant, The Western Pennsylvania Hospital, Pittsburgh.

Table I

Day No. 1 Nursing Shift, January 18, 1960
68 Cycles – 544 Observations
Work Sample

	(4) GN*	(1) PN*	(2) SN*	(1) NA*	TOTAL
I. Direct Care					
1. Treatment assisting	13	1	6		
2. Measurement	1	2	4	1	
3. Injections	5	1	6		
4. Patient pers. needs	2		15	6	
5. Handling patient	11		6	6	
6. Feeding			4		
7. Oxygen-Suction assist.	5		1		
8. Bathing			4		
9. Making bed	8	1	7	1	
10. Wr. Med. Rec.	25	5	6		
11. Read Med. Rec.			4		
12. Prep. & clean-up	13	2	3	3	
13. Wash hands	1		4	3	
14. Observation	1		2	1	
15. Other	2				
Tot. dir. care	87	12	73	21	193
Percentages	32	18	54	31	35
II. Indirect Care					
1. Paperwork	5				
2. Telephone	3		1		
3. Supervision	13	1	8	1	
4. Confer:					
Doctor	6				
Patient	5	2	9		
Visitor					
ICU Nurse	13		3		
Other	4				
5. Other				7	
Tot. indir. care	49	3	21	8	81
Percentages	18	4	15	12	16
III. Miscellaneous					
1. Off Floor	26	1	25	34	
Tot. misc.	26	1	25	34	86
Percentages	10	1	18	50	15
IV. Delay					
1. Idle-Personnel	6		14	4	
2. Waiting			3	1	
Tot. delay	6	0	17	5	28
Percentages	2	0	13	7	5
V. Reassignment (Tot)	104	52	0	0	156
Percentages	38	77	0	0	29
					100%
GRAND TOTAL	272	68	136	68	544

Productive time=direct and indirect care.

Non-productive time=miscellaneous, delay, and reassignment.

*GN–graduate nurse; PN–practical nurse; SN–student nurse;–NA–nurse aide.

Point "2": $\frac{360}{828} = 43.478$ percent *direct care* means that of the 828 observations, 360 of them fell under direct care. This is carried out for all the other categories in the study; all percentages total 100 percent, and all observations total 828.

Point "3": these percentages are now converted to minutes so that 43.478 percent of 510 minutes means that 222 minutes were spent in direct care. (All category minutes total 510 minutes or 100 percent.)

Point "4": patient hours were totalled for each of the six days that the graduate nurses were observed. Thus for six days of the nursing week study there were 13,630 patient minutes.

Point "5": the average number of patients per day is then determined by first dividing the number of minutes in the day nursing shift, which is 510, into the number of patient minutes, which give a figure of 26.7. This is the total number of patients for the six-day period, each 510-minute period equalling one full patient.

This then must be reduced to a one-day period, so six days is divided into 26.7 total patients who were present during this period, to give 4.45 average patients per day during the 510-minute day nursing shift for a six-day period from January 18 through January 24.

Point "6": the total productive time per 510-minute day per graduate nurse, which is 336 minutes, is divided by the average number of patients per 510-minute day, which is 4.45, to give the total of 75 productive minutes of graduate nurse time per patient per 510-minute day shift.

Point "7": the total period of time a graduate nurse is assigned is 510 minutes (7 a.m. to 3:30 p.m.). Of these 510 minutes, the graduate nurse is authorized a 30-minute lunch period which leaves 480 possible minutes that she can be present and productive.

However, there must be an allowance factor for acceptable personal time which the individual must have for personal necessities. This acceptable personal time percentage is 10 percent.[2] (It may be pointed out that the individual organization may either accept this figure as determined by Neibel, or allot an acceptable personal allowance time according to its own desires. This figure usually may range between 8 percent and 12 percent.) Thus, subtracting 10 percent or 48 minutes acceptable personal time, it is derived that out of a 510-minute day the maximum time a graduate nurse can be productive is 432 minutes.

Point "8": it is known that one patient will receive 75 productive graduate nursing minutes during this shift. Therefore, by dividing this known 75 productive minutes per patient into the maximum number of minutes that a graduate nurse could be productive (432), it is found that one graduate nurse would be necessary to take care of every 5.7 patients during the day nursing shift.

Table 2

Weekly Cumulative Observations and Percentages

WEEKLY CUMULATIVE OBSERVATIONS AND PERCENTAGES	WEEK I—6 DAYS 303 Cycles—2156 Observations Pt. Time*: 227 hrs., 10 min.					WEEK II—6 EVENINGS 300 Cycles—1698 Observations Pt. Time*: 289 hrs., 45 min.					WEEK III—6 NIGHTS 300 Cycles—1216 Observations Pt. Time*: 320 hrs., 50 min.			
NO. OF PERSONNEL	16	6	13	7		11	8	12	3		12	8	4	
OBS.	GN*	PN*	SN*	NA*	TOTAL	GN*	PN*	SN*	NA*	TOTAL	GN*	PN*	NA*	TOTAL
Obs. Direct Care	360	116	365	88	929	233	154	299	70	756	234	151	67	452
% Direct Care	43.5	37.9	55.3	24.2	43.1	42.8	38.5	49.7	45.4	44.5	39.0	37.2	31.9	37.2
Obs. Indirect Care	185	26	51	26	288	121	21	83	17	242	63	41	9	113
% Indirect Care	22.3	8.5	7.9	7.4	13.4	17.8	5.2	13.8	11.1	14.3	10.5	10.1	4.3	9.3
Obs. Miscellaneous	110	65	161	136	472	99	131	79	35	344	93	59	59	211
% Miscellaneous	13.3	21.3	24.4	37.4	21.9	22.6	32.8	13.1	22.7	20.3	15.5	14.5	28.1	17.4
Obs. Delay	31	9	82	27	149	91	93	109	32	325	210	108	75	393
% Delay	3.7	2.9	12.4	7.4	6.9	16.8	23.5	18.2	20.8	19.2	35.0	26.6	35.7	32.3
Obs. Reassignment	142	90	0	86	318	0	0	31	0	31	0	47	0	47
% Reassignment	17.2	29.4	0	23.6	14.7	0	0	5.2	0	1.7	0	11.6	0	3.8
OBS. GRAND TOTAL	828	306	659	363	= 2156 100%	544	399	601	154	=1698 100%	600	406	210	1212 100%

*GN—graduate nurse; PN—practical nurse; SN—student nurse; NA—nurse aide. Obs.—Observations; Pt. Time—patient time.

Conclusions

The following conclusions are presented from an analysis of the work sample of the pilot study.

A patient in the intensive care pilot study received varying amounts of productive nursing service care according to his needs during the three nursing shifts.

One patient receives the following productive nursing care minutes per 510-minute day:

510-Minute Day

Service	*Minutes*
Graduate	75
Student	72
Practical	50
Aide	34
	231 productive nursing minutes.

Then, 231 productive nursing minutes=3 hours, 51 minutes, or 45.293 percent.

One patient receives the following productive nursing care minutes per 510-minute evening:

510-Minute Evening

Service	*Minutes*
Graduate	55
Student	57

(Continued on next page)

Table 3

Week No. 1
Day Nursing Shift: 510 Minutes
Graduate Nurse — 16 Units, Present 6 out of 6 Days

1. 828 observations
2. $\frac{360}{828}$=43.478% direct care; $\frac{110}{828}$=13.285% miscellaneous; $\frac{185}{828}$=22.343% indirect care; $\frac{31}{828}$= 3.744% delay; $\frac{142}{828}$= 17.149% reassigned

   65.821% productive time; 34.178% non-producive time
3. Percentages converted to minutes:

222 minutes	direct care	68 minutes	miscellaneous
114 minutes	indirect care	19 minutes	delay
		87 minutes	reassigned
336 minutes	productive time	174 minutes	non-prod-time

4. Patient hours:
   25 hr. 20 min.= 1520
   25 hr. 30 min.= 1530
   25 hr. 25 min.= 1525
   49 hr. 0 min.= 2940
   52 hr. 30 min.= 3210
   48 hr. 25 min.= 2905
   13630 patient minutes
5. Average patients per day=4.45

   510 minutes / 13630 patient minutes = 26.7 total patients

   6 days / 26.70 total patients = 4.45
6. Total productive time per 510-min. day per GN (336 min.), divided by average number of patients per 510-minute day (4.45)=75 productive minutes of graduate nurse time per patient per 510-minute day shift.
7. GN works 510-minute shift minus 30 minute lunch:
   510
   − 30
   480
   − 48 minutes (10% acceptable personal time)
   432 minutes
   GN could be productive
8. One patient receives 75 minutes during day shift:

   75/432.00 = 5.7

Therefore: one GN would be necessary to take care of every 5.7 patients during the day shift.

Table 4

Productive Nursing Minutes Received Per Patient Per Nursing Shift

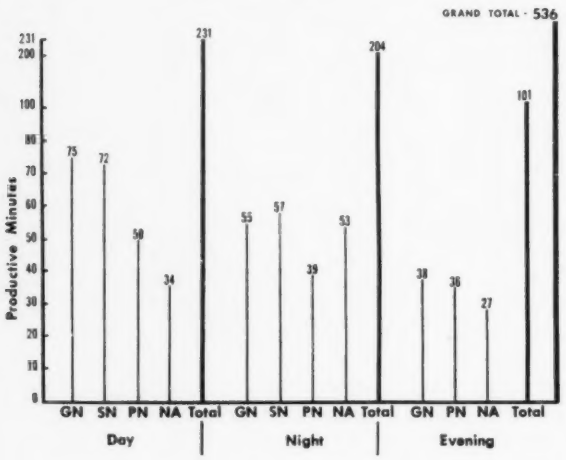


Table 5

Number of Patients that One Graduate, One Student, One Practical, and One Nurse Aide Can Care for Per Nursing Shift

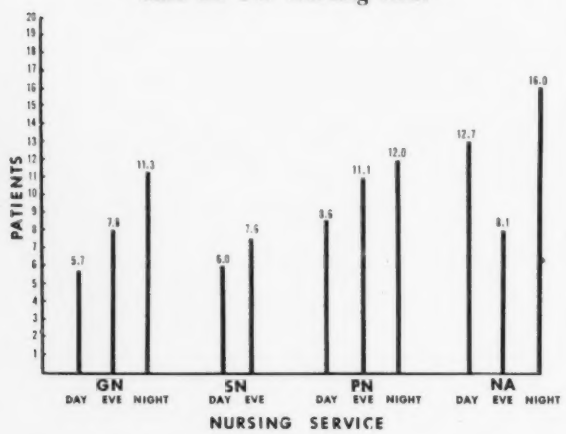


Table 6

Conclusions as Derived from Work Sample for Necessary Nursing Service/Patient Ratios Per Nursing Shift

One	Patients		
Nursing Service	Day	Evening	Night
GN	5.7	7.8	11.3
SN	6.0	7.6	-
PN	8.6	11.1	12.0
NA	12.7	8.1	16.0

Practical	39
Aide	53
	204 productive nursing minutes.

Then: 204 productive nursing minutes=3 hours, 24 minutes, or 40.0 percent.

One patient receives the following productive nursing time per 495-minute night:

495-Minute Night

Service	*Minutes*
Graduate	38
Practical	36
Aide	27
	101 productive nursing minutes.

Then, 101 productive nursing minutes=1 hour, 41 minutes, or 20.404 percent.

The results of the study show that the productive nursing time received per patient in the intensive unit totalled 536 minutes or 8 hours and 56 minutes, which equalled 35.38 percent of the total nursing shift time available. (*See table 4.*) This is in excess of the hospital average of three hours and 30 minutes per patient.

It is very significant to note that the average life cycle, consisting of greater activity during the day, a lesser degree during the evening, and sleep during the night, continued in the intensive care unit even for these patients who were critically ill. At first thought it would have appeared that the same level of intensive care would have been necessary by all three nursing shifts.

However, as illustrated above, the level of intensity of care needed per patient followed the average life cycle activities, even though the patient remained critical throughout the entire period. Therefore, nursing staffing patterns for intensive care must reflect this conclusion and be adjusted according to the level of care needed during each nursing shift.

The nursing service/patient ratios per nursing shift which give the best possible care, while at the same time utilize personnel to the maximum extent, were determined by the work sample to be:

510-Minute Day

One graduate nurse for every 5.7 patients.
One student nurse for every 6.0 patients.
One practical nurse for every 8.6 patients.
One nurse aide for every 12.7 patients.

510-Minute Evening

One graduate nurse for every 7.8 patients.
One student nurse for every 7.6 patients.
One practical nurse for every 11.1 patients.
One nurse aide for every 8.1 patients.

495-Minute Night

One graduate nurse for every 11.3 patients.
One practical nurse for every 12.0 patients.
One nurse aide for every 16.0 patients.

(*See tables 5 and 6.*)

(*Continued on page* 55)

A SIGNIFICANT NEW RESEARCH DEVELOPMENT FROM

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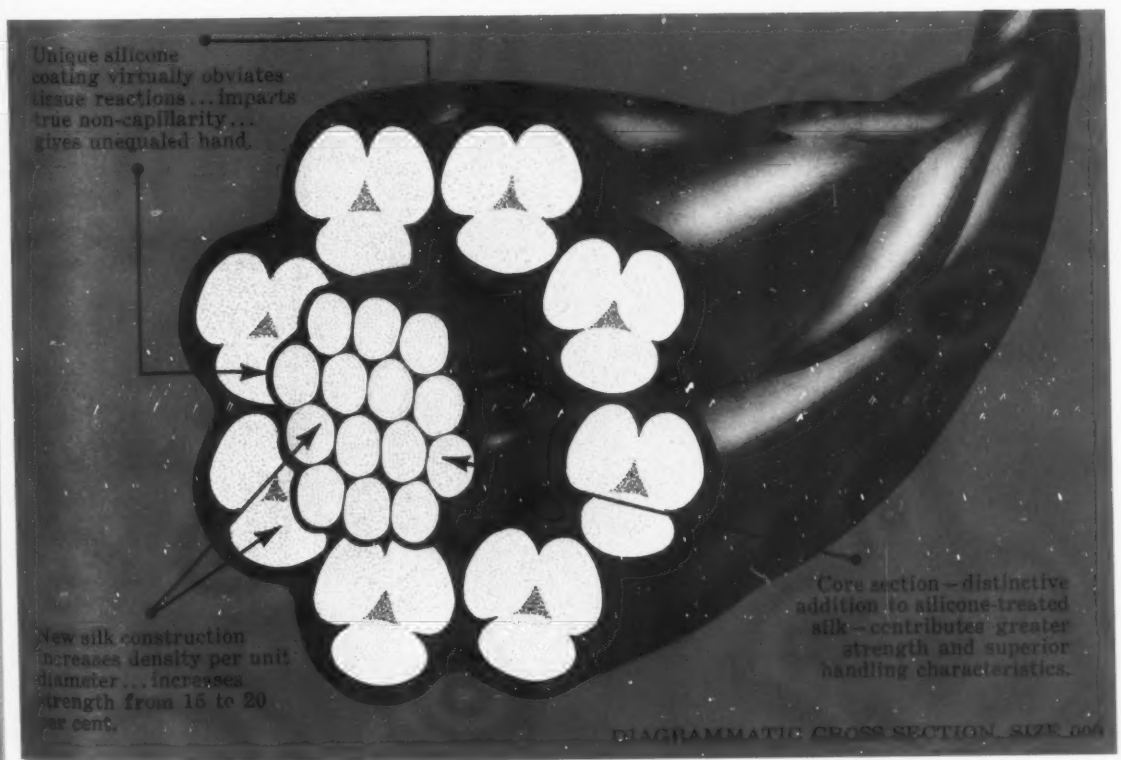
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New silicone-rubber coating dramatically overcomes the problem of tissue reactions reported[1-4] with wax-coated silk.

No granuloma, paraffinoma, adhesions, inflammatory reaction or other significant adverse response has been encountered with the surgical use of silicone material.[5-10] Excellent tissue tolerance shortens "lag period," does not inhibit tissue repair. The unique coating process encases all fibers of the suture strand in pure, surgical silicone rubber to present a continuum of physiologically inert suture material to the tissues.

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40-day embedment: Thin dense sclero-collagen capsule surrounds suture. No other remarkable findings. No increase in suture volume. (Section cut obliquely to long axis, giving elongation.)

COMMON REACTION TO WAX-COATED SILK

40-day embedment: Moderately thickened sclero-collagen capsule surrounds suture mass. Granulation tissue invaded and increased suture mass by about a factor of 4 over that observed after three days. Many foreign body giant cells on inside of collagen capsule. New blood vessel elements on the border of the capsule.

Mallory's connective tissue stain. Sections cut at 7 microns. Photomicrographs taken at 100x. Suture size: 00

References:

1. Wilkinson, J. F.; Freeman, G. G.; New, N., and Noan, R. D.: Lancet 271:621, 1956. 2. Brown, J. B.; Fryer, M. P., and Lu, M.: A.M.A. Arch Surg. 68:744, 1954. 3. Large, O. P.: Am. J. Surg. 60:415, 1943. 4. Wolf, R.: Ibid. 55:153, 1942. 5. Rosenberg, N.; Moolten, S. E., and Vroman, L.: Arch Surg. 60:363, 1950. 6. Blunt, Jr., W. J.: Am. J. Surg. 95:512, 1958. 7. Lahey, F.: New England J. Med. 240:161, 1949. 8. Dimant, S.: Lancet 267: 533, 1954. 9. Rowe, V. K.; Spencer, H. G., and Bass, S. L.: J. Ind. Hygiene & Toxicol. 30:332, 1948. 10. DeNicola, R. R.: J. Urology 63:168, 1950.

SILICONE-TREATED SILK SUTURES

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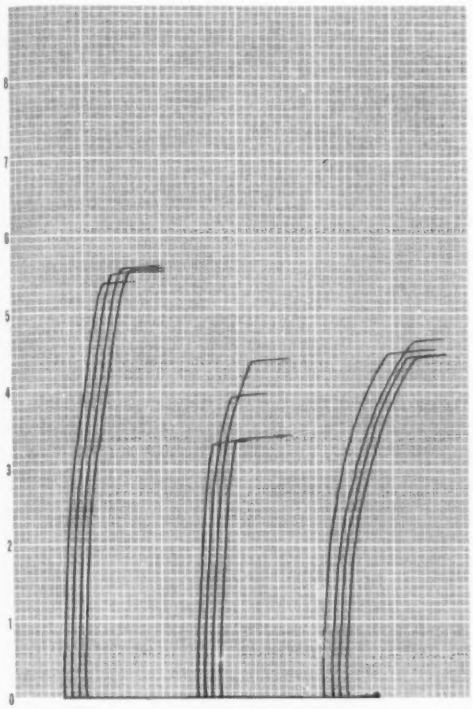
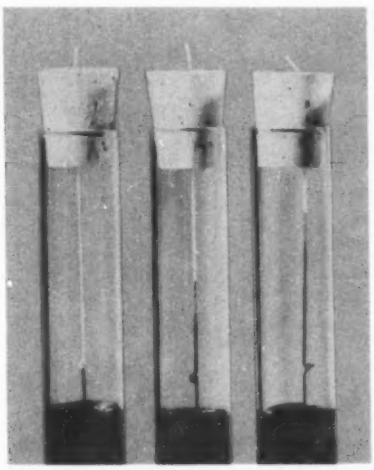


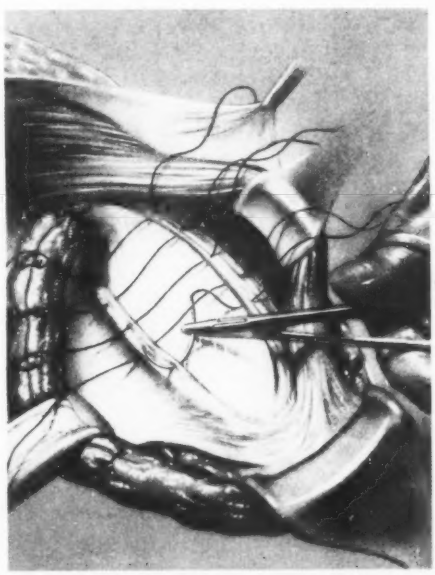
2 15% TO 20% GREATER TENSILE STRENGTH . . .

Superiority over other silks is achieved through new, unique braiding process which increases silk density per unit diameter. Added strength may permit selection of smaller size suture in some instances. Silicone coating prolongs *in situ* strength, protects suture against enzymatic or body fluid invasion. Continued tissue-approximation is assured; neo-vascularization and fibrosis are minimized.



3 ABSOLUTE NON-CAPILLARITY

...surpasses all wax-coated silk. Silicone coating prevents "carrier-action" in spread of bacterial contamination along the suture line. The true zero-capillarity has been demonstrated in exacting laboratory tests. The surgical silks tested were subjected to three successive boiling treatments, drying and suspension in dye solution.



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(*Continued from page* 50)

There were more productive minutes during the day due to the fact that doctors visited the unit during this period and their orders were carried out then; pharmacy orders were filled; x-rays were taken; medications given; and all functions that required the services of hospital personnel who worked the day shift were carried out during this period.

In summary:

1. The results of the work sample provided the number of productive minutes of care received per patient from each of the nursing services, which included graduate nurses, student nurses, practical nurses, and nurse aides, and also provided the number of productive minutes of care for each of the shifts.
2. Necessary nursing service/patient ratios were determined from the work sample.
3. The total productive time received per patient for the three nursing shifts was eight hours and 56 minutes.
4. The level of intensity of care needed per patient followed the average life cycle as it decreased proportionately from the day shift to the evening shift to the night shift.
5. Nursing staffing patterns must reflect this fact and be arranged according to the need of the patient for each of the nursing services during the day, evening, and night shifts.

Recommendations

In addition to the formulation of a guide to determine nursing staffing patterns, other valuable information became available during the study that should be considered as corollary factors in establishing an intensive care area.

1. The intensive nursing patterns as derived from the results of the work sample (table 6), are suggested for the most effective and economical staffing of an intensive care unit. (See section on suggested nursing patterns below.)

The example of staffing of graduate nurses for 7 to 12 patients is cited as an explanation of converting the number of nursing personnel required per day for three nursing shifts into the cost that these staffing patterns will accrue. As:

	Day	*Eve.*	*Night*	*Total 24-hr. period*
GN (graduate nurse)	2	2	2	6 necessary

Thus the following equations are known: one 24-hour period requires six GN's; therefore, a 30-day month requires 180 nursing days (6 GN's x 30 days). One GN will work a certain number of days out of each 30-day period, according to hospital policy. Let us say that 20 out of 30 days equals one nurse work month. Then to find the number of different individual GN's needed for one month, divide the 20 days that one GN works per month into the 180 nursing days required. This gives a total of nine individual nurses needed for a 30-day month in order to assure that a 24-hour period will be covered by six GN's for each day of the month.

Nursing costs are now determined by multiplying the nine GN's needed times their base monthly salary, which is, let us say, $300 per month. Therefore, nursing costs will total $2,700 a month or $90 a day (30 days into $2,700) to staff 7-12 patients with six GN's per 24-hour day.

Suggested Nursing Patterns

0-6 *patients*	7-12 *patients*	13-18 *patients*	19-24 *patients*
Day			
*2 GN	2 GN	3 GN	4 GN
1 SN	2 SN	3 SN	4 SN
0 PN	1 PN	2 PN	3 PN
0 NA	1 NA	1 NA	2 NA
Evening			
**2 GN	2 GN	2 GN	3 GN
1 SN	1 SN	2 SN	3 SN
0 PN	1 PN	2 PN	2 PN
0 NA	1 NA	2 NA	3 NA
Night			
†2 GN	2 GN	2 GN	2 GN
1 PN	1 PN	1 PN	2 PN
0 NA	0 NA	1 NA	1 NA

These are the number of nursing service personnel necessary. To find the number of individual nurses needed to maintain these ratios over a seven-day period, with a five-day work week (as explained before), multiply each of the suggested nursing patterns by $\frac{7}{5}$.

2. The following procedures are recommended in order to determine nursing staffing costs:

a. Initiate a pilot study.

b. Using the work sampling method, determine productive and non-productive time.

c. Convert percentages derived from the work sample into minutes and then into the productive time one nurse spends per patient per shift.

d. Determine the number of patients to whom one nurse can give adequate and necessary care.

e. Arrive at nursing staffing patterns per number of patients to be accommodated.

f. Convert staffing patterns required to actual number of different individual nurses necessary to maintain these patterns.

g. Determine nursing salary costs for an intensive care unit.

3. The location of the intensive care unit may have an influence on its utilization and effectiveness. The most appropriate location would appear to be situated in close proximity to the operating suite,

(*Continued on next page*)

*One additional graduate nurse is included for 0-6 patients even though the ratio shows one graduate to every 5.7 patients because there should be a minimum of at least two nurses – one of them a graduate – present, and this staffing pattern will allow for lunch hours and off-the-floor time.

**Though the ratio shows 7.8 and 7.6 patients per graduate and student respectively, two graduates and one student are staffed for 0-6 patients because it is necessary to maintain an adequate staffing level.

†Refer to first notation.

recovery room, and diagnostic x-ray facilities. Intensive care unit areas too remote from these facilities may tend to create difficulties in reducing, insofar as possible, excessive transportation of the critically ill from the operating room, for instance, to the intensive care unit.

4. The concept of what an intensive care unit means to the hospital and its patients should be vigorously presented to all those who will come into contact with it. The interest and cooperation of the medical staff must be especially solicited so that the staff will become knowledgeable with the concept and the possible problem areas inherent in intensive care in order that it may use the unit in the most efficient and economical manner. The patients must also be made to understand the idea surrounding the utilization of such an area.

Many times, as with any new concept, it has been found that the utilization of a new intensive care unit may suffer at the beginning due to the failure of the medical staff to fully realize the implications and potentialities of such a unit, how it will operate, and what it may mean to the patients. Also, many patients in actual need of such care have refused to be transferred due to their misconceptions as to the purpose of the unit.

Thus, to maintain full and necessary utilization, it is felt to be worthwhile for an intensive public relations and informative campaign to be conducted within the community, the medical staff, the nursing personnel, and other interested parties concerning the aims and concept of an intensive care unit.

5. The criteria for admission and transfer must be established at the beginning; however, it is most necessary that all parties concerned realize that such criteria must remain flexible insofar as the needs of the patient and the hospital are concerned. To be more explicit, it is meant that the basic criteria established should remain the guiding intensive care unit policy.

However, as the occupancy of the intensive care unit dips, then the criteria, at the discretion of the intensive care unit medical staff committee, may possibly become more flexible and less stringent so that those patients most in need of such care may receive it. Also, as the occupancy of the intensive care unit rises to maximum limits and a waiting list is created, the admission criteria may, of necessity, become tightened. This has been the experience and judgment of the medical staff intensive care unit committee of the pilot hospital.

6. The concept of an intensive care unit must be that of flexibility and movement. It is noted that a patient who will be moved to the unit from an emergency situation may remain only a short time and be transferred to the operating room. Also, two or even three patients may occupy the same bed at given intervals during one day due to transfers in and out.

Patients may have to be moved to other areas of the intensive care unit because it is more efficient to group them or because it is best that they not remain next to a patient in the termination phase. In an intensive care unit area of, let us say, four bed units, only two beds in each unit may be occupied due to transfers. Thus it is more feasible to combine these patients into one unit for efficiency and economy. A fluid concept should be maintained.

7. Blue Cross reimbursement may have an effect on charges in an intensive care unit. Blue Cross may decide to consider the intensive care unit as a part of the entire hospital and include the unit in the normal cost determination made. Or, it is possible that Blue Cross may consider an intensive care unit as a separate hospital care concept and determine costs of this unit as an individual entity. Administrative decision as to charges will be based to a great extent upon which method of cost appraisal the local Blue Cross organization intends to use.

8. One of the most interesting concepts gained from the study was that the emotions of the nursing personnel involved in this type of special care must be seriously considered. It was found that the emotional factor weighed heavily in the recruiting and maintaining of nurses for this unit. Due to the comparatively high mortality rate of the patients in the intensive care unit, because of their condition upon admittance to the unit, a lowering of morale of the nursing services was evident.

Assigned personnel realized the situation; however there is little doubt that the stresses of concentrated care reflected themselves in an emotional strain on the part of the nurses. The accepted pattern of nursing is to see the patient through the difficult times and then become a part of his recovery and convalescence. This feeling of accomplishment plus the gratitude of the patient is one of the great compensations of a nursing career.

However, in an intensive area the nurse will see her patients only in the critical state as the patients will be transferred when recovery begins, due to the nature of the unit. The high death rate also produces an air of depression. Many nurses refuse to work in such an area due to this type of strain, and many request transfer out because of this factor.

It is recommended that several things be done to alleviate this. In order to reduce the number of deaths, the admission criteria must stress that moribund patients will not be admitted to this area. It is particularly important that intensive care not receive the connotation of a "death row," both to patients and nursing personnel alike.

Nursing personnel selected must have the necessary qualifications, both professionally and emotionally. The idea of a premium pay for this area in conjunction with a policy of temporarily rotating personnel out of the unit after every so many weeks to a normal care pavilion, or giving additional time off on a rest and rehabilitation basis, is highly recommended.

9. Administration may decide to do several things as to establishing an intensive care unit charge. The charge may or may not coincide with the actual costs of the intensive care unit.

(*Continued on page* 64)

Review of Hospital Lawsuits

By Leo T. Parker, Attorney at Law

• OLD LAW PROTECTS HOSPITAL

Frequently very old and almost forgotten laws still are effective to give immunity to state, county and city hospitals. For instance, in Wolf v. Ohio State University Hospital, 162 N. E. (2d) 475, a patient named Wolf sued the state-maintained hospital for heavy damages, claiming that she was administered tetanus antitoxin, although a test had disclosed that she was allergic to it. She alleged that as a result of the hospital employee's carelessness she developed a violent reaction.

The higher court refused to hold the university hospital liable in damages, because of a state statute enacted in 1870 which did not specifically authorize such suits against hospitals. The court said:

"A governmental unit or agency is immune from liability for torts committed in connection with operating a hospital where it is operated in the performance of a governmental function."

This higher court went on to explain that even though a public hospital or other institution is incorporated and amenable to suit, it is the general rule that such institution or its governing or managing board is a mere agent or instrumentality of the state and accordingly is immune from tort liability in the absence of a constitutional or legislative enactment to the contrary—at least for negligence while performing or engaged in governmental functions or activities, since, while so engaged, it partakes of the state's immunity.

Negligence Must Be Proved

Modern higher courts consistently hold that a hospital corporation is not liable in damages for injuries sustained by a patient, unless the testimony proves very conclusively that the patient's injuries resulted from negligence of authorized employees or agents of the hospital corporation.

For example, in McDonald v. Foster Memorial Hospital, 338 Pac. (2d) 607, the testimony showed that a 10-year-old girl named McDonald was admitted to the Foster Memorial Hospital to have her tonsils and adenoids removed. She was assigned to the second floor and placed in a hospital bed of standard size equipped with side rails extending about 15 inches above the bed.

At 7:15 the child's temperature was taken by a registered nurse who had just come on duty. She was then sleeping quietly, her color was good, and she was breathing normally. At approximately the same time her pulse was taken by another registered nurse who described her condition as normal for a patient under preoperative medication. The girl's pulse was 104, which, according to the nurse, was within normal range under the circumstances, and she did not report the fact to her supervisor. Both nurses testified that the bed's rails were up.

At 7:23 a.m., the patient fell out of her bed, sustaining a lineal fracture of the jaw. When she was found on the floor the side rails of her bed were still up.

In subsequent litigation, the higher court indicated that the Foster Memorial Hospital may be liable in damages for injuries to McDonald only if the testimony proves that negligence of nurses and employees were directly responsible for McDonald's injuries. The court said: "A private hospital is not an insurer of a patient's safety."

Letter Is Privileged

A letter or communication about the character of a hospital employee or former employee is privileged if made in good faith by a person, having a legal duty, to one also having an interest or duty.

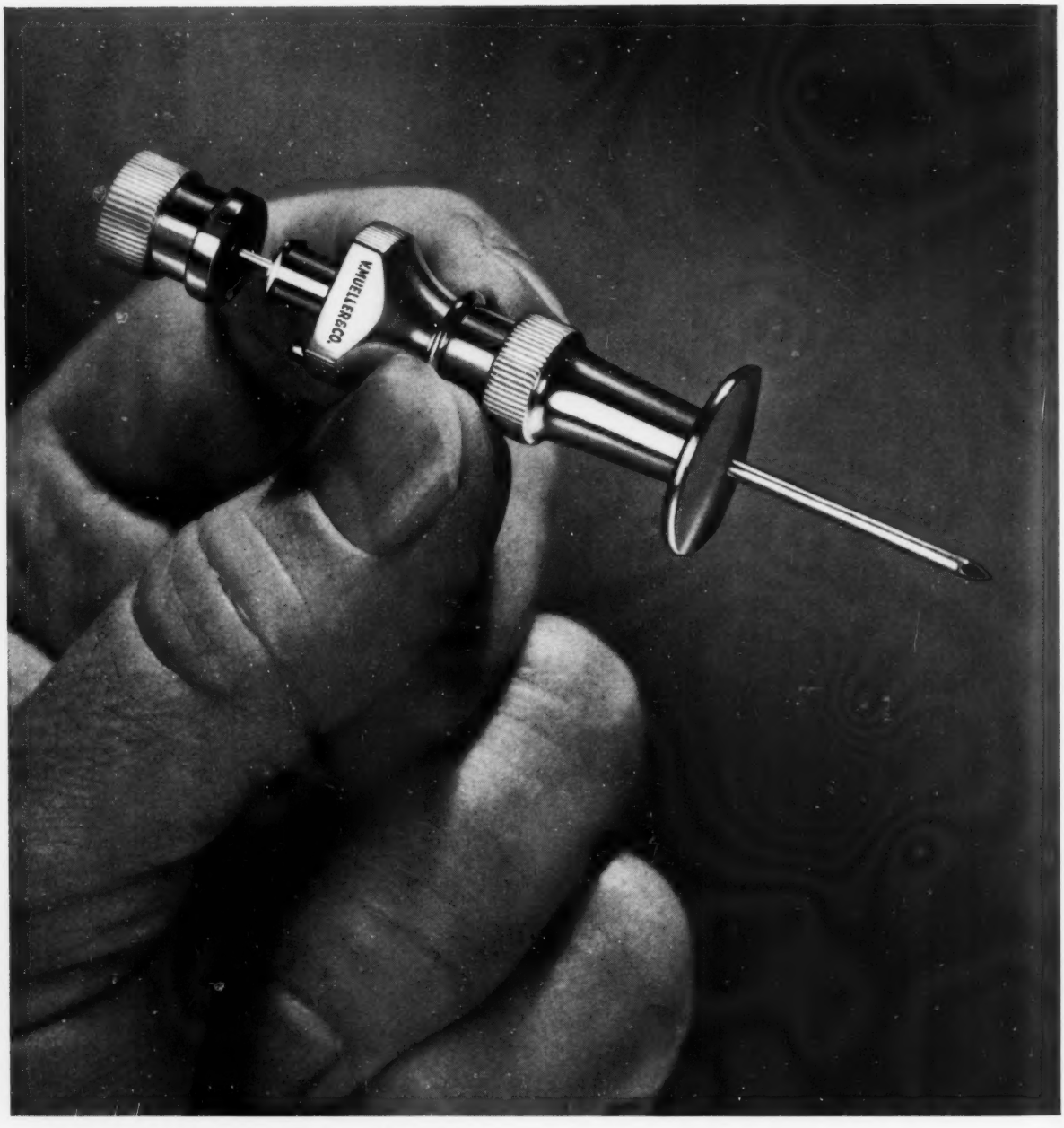
In Judge v. Rockford Memorial Hospital, 150 N.E. (2d) 202, a registered nurse brought suit against the hospital charging libel, and seeking to recover damages resulting from an alleged libelous letter written by the director of nurses. The plaintiff contended that because of the letter, she could not thereafter obtain desirable employment.

The letter, written to a nurses' professional registry, stated that there were certain losses of narcotics during times when the plaintiff was on duty in the hospital.

After considerable testimony the higher court held that this letter was a privileged communication, and because there was no evidence tending to show malice, the communication was privileged. Hence, the Rockford Memorial Hospital was held not liable in damages.

The court explained that the writer of the letter, as the director of nurses at the hospital, was charged with supervising the care rendered by private-duty nurses and other nurses to hospital patients. Her

(*Continued on page* 59)



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(*Continued from page 57*)

duty and interest extended not only to the patients and their welfare, but to the doctors, and to her superiors, the officers and trustees of the hospital, and she had to keep in contact with the nurses' registry when necessary. In this respect the court said:

"There being no competent evidence in the facts and circumstances exclusive of the letter itself, or in the letter itself, tending to show malice in fact, or actual malice, or express malice, the Court was required to allow the motion for a directed verdict."

Law Favors Hospital Corporations

A few weeks ago a higher court held that no suit by a patient against a hospital in one state will be decided in favor of the patient if he is a resident of another state, unless the testimony shows conclusively that the injured patient filed his suit in consideration of valid and effective laws.

For example, in Dodson v. Travelers Insurance Co., 266 Fed. Reporter (2d) 52, testimony showed that the Travelers Insurance Co. issued an insurance policy of liability to the Memorial Hospital located in Arkansas, insuring the hospital against financial loss due to injuries sustained by all persons resulting from the negligence of the hospital's agents or employees for the sum of $25,000 for each person.

A patient named Dodson suffered serious injuries while in the Memorial Hospital and sued the Travelers Insurance Co. to recover damages for the injuries which she alleged were caused by the negligence of employees of the hospital. Further testimony showed that the patient was a citizen of Missouri at the time of her injury.

The higher court held that Dodson could recover no damages because of uncertainties in the Missouri state laws as to her legal rights to sue the insurance company or hospital for damages for injuries sustained while she was a patient in the Arkansas hospital.

High Damage Allowance

An official of a hospital corporation wrote recently: "I have observed that often in your writings you mention that present-day higher courts award high damages for injuries to hospital patrons, visitors, and particularly to employees. Can you give a specific example?"

In Houston v. Brooks, 319 S. W. (2d) 427, the testimony showed that an employee, Brooks, was holding a metal mop handle when it contacted a high-voltage wire, thereby causing him severe injuries. His burns necessitated a number of operations and skin and fat-tissue grafts. He suffered considerable pain while hospitalized for some five or six months.

The lower court awarded Brooks $155,833.45 damages for his injuries. The higher court approved the verdict except that it reduced the damage allowance to $105,833.45.

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AIR-CONDITIONING

(*Continued from page* 46)

pairs at once. Coat all fire surfaces with mineral oil.

WATER TREATMENT

Water, a necessity for most air-conditioning systems, can be their biggest enemy. Untreated water can cause scale, inhibiting heat transfer. Although most hospitals treat water used by their boilers, few take such precautions with the cooling side of their systems.

A lot of valuable time and money can be wasted trying to find out why a system is not performing at full capacity when in many cases the trouble lies in scale-clogged tubes. To prolong equipment life and insure efficient operation, obtain specific water conditioning recommendations from specializing companies.

Water treating methods, in addition to controlling scale deposits, frequently contain additives which prevent the growth of organisms and damage by corrosion in cooling towers, on coil surfaces, and elsewhere. Among the many agents used to prevent slime deposits are chlorine and sodium pentachlorophenate. Corrosion inhibitors include chromate and nitrite salts. The responsibility for maintaining adequate concentrations of these chemicals is also that of the water treating specialist.

SPARE PARTS

Spares for key parts should be kept on hand for scheduled inspections and emergencies. Check your parts' lists and decide what replacements will be needed. Put filters, oil, lubricants, gaskets, and refrigerants in stock before startup.

SERVICE PROGRAMS

Consider an annual inspection by equipment manufacturers. These service representatives provide valuable assistance in calling attention to items which, if left unheeded, might cause expensive repair or replacement far exceeding the cost of a visit.

Some hospital administrators contract with outside firms to have their equipment maintained and serviced. The administrator may find two types of service-maintenance contracts available.* A "planned inspection" contract, for instance, includes a complete review of the customer's system at prescribed intervals and during shutdown. Recommendations for necessary repairs are made in a report to the administrator.

Complete responsibility for upkeep of the system is offered with a "planned maintenance service" type of contract. It provides for regular inspection at which time necessary replacements or repairs are made. Instruction of hospital personnel who operate the system is an integral part of this contract, with refresher courses – at which general instruction is given and special operating and maintenance problems are handled – conducted annually at various locations.

*As with Carrier Corp.

 For further information see postcard opposite page 134.

Hospital Accounting and Statistical Problems

By David H. Tarlow, C.P.A.*

Q. We have been criticized by our Blue Cross agency regarding the average length of stay of patients in our hospital. Do you have any data regarding the average length of stay in hospitals?

A. This factor seems to vary both as to locale and type of hospital. For your guidance we present the following tabulation for the calendar year 1959. Column 1 reflects the compilation of the United Hospital Fund of New York showing the average length of stay in 31 voluntary non-profit general hospitals in New York City, of *all classes* of patients, while column 2 shows the average of *Blue Cross patients only* in three Ohio Valley hospitals (your area) covering a total of 9,350 Blue Cross insured admissions.

Type of Patient Accommodation	Column 1	Column 2
Private	11.3	(
Semi-private	9.0	(9.5†
General Ward	12.2	(
All Inpatients	10.2	9.5†

†Blue Cross only.

Q. Last month I obtained a position at this hospital through an employment agency. Naturally, I paid a fee (one week's salary) for this service. I now have been advised that this is not considered an expense for tax purposes and I cannot claim it as a deduction. Is this correct?

A. This statement is now correct. The Internal Revenue Service has revoked a 40-year-old decision that taxpayers may deduct from gross income any fees paid to employment agencies. The new decision is retroactive to January 1, 1960, and does not affect any such claims for 1959 or prior periods. The Internal Revenue Service's new interpretation is that such fees are personal expenses and, as such, cannot be claimed as deductions in federal income tax returns.

Q. In the October issue of HOSPITAL TOPICS you demonstrated a routine for bank reconciliations where a large number of checks are used. This is a manual routine. Would you not recommend electronic equipment for such a hospital?

A. Our reply was in answer to a specific question. As to electronic equipment, we would have to study the needs before making a blanket recommendation. In some instances, it is possible to purchase prepunched checks which are collated by the bank in numerical order, but this would be predicated on the availability of electronic equipment at the bank. We have found that all banks as yet have not adopted such data processing machinery.

Q. What does an auditor look for in checking an inventory count of materials and supplies?

A. The following outline is presented by the American Institute of Certified Public Accountants: (1) accuracy of computations, footings and recapitulations; (2) basis of pricing; (3) quantities, quality, condition.

Q. We have recently completed our new hospital structure. Certain securities which we received as donations to the building fund remain uncashed at this time. In preparing a report for the Board of Trustees what information should I list with respect to these securities?

A. It is suggested that you list the following data with respect to each item:

1. Description of security (name, etc.).
2. Denomination of bonds or par value of shares.
3. If bonds, state interest rate and date of maturity.
4. Number of shares and face value of bonds.
5. Cost of securities or amount at which carried on books.
6. Interest and dividends received during the period you have held these securities.
7. Market quotations as at the date of your report.
8. Location of securities.
9. *If hypothecated, with whom, and for what.*

Q. If a patient has not checked out by the check-out hour, is a hospital justified in charging a full day's room and board? Would it be more reasonable to scale down the additional charge as it is done in hotels? What has been your experience in this situation?

A. This would appear to be a question of policy rather than accounting. In our experience we find that permission is often granted for an additional stay at no added charge when valid reasons are presented. On other occasions a partial charge is made on a sliding scale.

*Senior Partner, D. H. Tarlow & Co., Hospital Accountants and Auditors, New York City, N.Y.

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SCANNING

(*Continued from page* 9)

Mom's washing machine seems to have a fascination for the youngsters. During a six-year period recently ended, 423 children were admitted to Children's Hospital, Louisville, Ky., for treatment of wringer injuries.

According to Drs. Hugh B. Lynn and Richard C. Reed, it's not just the regular Monday washday that offers the wringer hazard. Children aged two to six years are apt to be house-bound and bored on any rainy day. The fascinating rollers offer a new interest to them.

According to the doctors, there is considerable variation in the amount of damage a wringer can cause. It appears that the quicker the motor is stopped, the quicker the compression is removed, and the less the damage.

The best treatment is preventive. Among precautions suggested are: unplug the washing machine when it is not in use; keep young children away when it is in use; be sure the wringer has a safety release; and never leave a young child alone in the house.

Platinum Blondes a Brittle Lot

The degree of bleaching required to produce a platinum blonde can severely damage the hair shaft, according to Veronica L. Conley, Ph.D., director of the A.M.A. department of nursing.

The peroxide used in such bleaching must penetrate to the cortex of the hair where the pigment is located. In so doing, it often leaves the hair dry, brittle, and more absorbent.

Dr. Conley adds that the damage does not stop with the bleaching process itself. With each shampoo, some decomposition products and oxidized pigments are extracted from the hair shaft.

The exact nature of the damage is unknown, which accounts for the lack of methods to protect the hair from the effects of hydrogen peroxide.

Dr. Conley holds out some hope for the would-be blonde, however. She states that adverse reactions to the bleaching are primarily limited to the hair shaft itself, and future growth and inherent physical characteristics are not affected.

Supine Bottle-Feeding May Cause Ear Infection

Milk found in the cleft, or cavity, of the middle ear in some infants has prompted Dr. R. Bruce Duncan, Wellington, New Zealand, to recommend that babies be bottle-fed in an upright position.

According to Dr. Duncan, the supine position of an infant while bottle feeding is a predisposing factor in inflammations of the middle ear cleft. The milk found in the cleft results from a sudden gush of milk from the bottle which the baby cannot always prevent from entering the postnasal space and nose. On the other hand, a mother's breast is adaptable and it is uncommon to observe the ear infection in a breast-fed baby.

The New Zealand doctor recommends the upright bottle-feeding for babies up to the age of three months; all infants in hospitals; all premature infants; babies whose noses are blocked by allergy, bacterial, or virus infection; and older children who have had inflammations of the middle ear.

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The charge may meet the cost; the charge may be higher than the cost in order to compensate for free patients who may come into the unit; the charge may be lower than the cost because it has been found that doctors tend not to utilize an intensive care unit for their patients if the rates are too high. Charges may be below cost in the intensive care unit and higher than cost in a self-service unit so that they will balance out; the philosophy may be for each unit of progressive patient care to be self-sufficient and pay for itself, or one phase may be charged higher to compensate for lower charges in another.

Some intensive care units may have an inclusive rate, or some may maintain a standard bed rate with an ancillary necessity such as laboratory and x-ray remaining separate. These are all decisions for the hospital administrator to make. He must consider all the corollary factors that interrelate and the multiplicity of forces that may affect his decision.

However, regardless of how he may decide, it is still necessary that he pre-determine the actual staffing patterns and costs of an intensive care unit so that his eventual decision may be made in the comprehensive, knowledgeable, and informative manner necessary for such a decision.

10. It is felt that the concept of an intensive care unit is extremely valuable and definitely gives the patient the best care possible.

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2. Neibel, Benjamin W., *Motion and Time Study*, Homewood, Ill.: Richard D. Irwin, Inc., 1955.

Ad Man Recommends $20 Million A Year Campaign for Hospitals

A $20 million a year advertising campaign to improve public understanding of hospitals was suggested by Emerson Foote, president, McCann-Erickson Advertising Co., at the recent American Hospital Association meeting held in San Francisco.

Mr. Foote said he believes that if this amount were invested in advertising every year for five consecutive years, "public apathy and indifference and ignorance about hospitals could be reduced to such an extent as to dramatically step up fund-raising potentials." He predicted that such a campaign, in which hospital financial needs could be explained, might make possible an increase of $500 million a year in giving to nonprofit hospitals.

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Results of Survey On Physicians' Practices

The National Opinion Research Center, University of Chicago, has interviewed 587 physicians to determine the opinions and practices of a cross-section of specialists and general practitioners.

Sponsored by the American Cancer Society, the study represents the doctor half of a sample of patient-physician relationships and is heavily weighted toward those physicians who have large general practices and are between 40 and 60 years of age.

Researchers found that although specialists spend less time seeing patients in their offices and making home visits than did non-specialists, the specialists did devote more time to hospitalized patients.

Ninety-five percent of the general practitioners and 99 percent of the specialists have some hospital affiliation, but 39 percent of the former as compared to 21 percent of the latter have only one such affiliation. A quarter of the specialists are associated with four or more hospitals; only one GP in ten is in this position.

The specialists are more likely (26 to 14 percent) to hold an appointment of "senior" or "chief," while the non-specialists (10 to 3 percent) are more likely to hold only a courtesy appointment.

Practically all the doctors belong to the AMA, and two-thirds of the specialists are members of one or more specialist societies. One-third of the non-specialists are members of AAGP.

Three out of every four of those interviewed believe that all adults should get an annual checkup even if they are feeling all right. An additional 15 percent say it depends – primarily on age.

As might be expected of a mature group of physicians with large practices, the income of these doctors is quite high. Only one netted less than $10,000 a year, and the majority (51 percent) placed their incomes at $20,000 or more. Specialists, of course, earned more than non-specialists.

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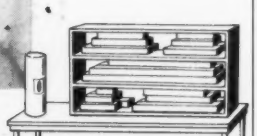

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The names and addresses of the publisher, editor, managing editor, and business managers are: Gordon M. Marshall, publisher; Marie L. Jett, editor; Marcella Skandis, business manager.

The owner is: Hospital Topics, Inc., 30 W. Washington St., Gordon M. Marshall, 30 W. Washington St., James F. Fleming, M.D., 36 S. Wabash Ave., all of Chicago.

The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of the total amount of bonds, mortgages, or other securities are: none.

The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: 12,051.9 per issue.

/S/ Gordon M. Marshall, publisher. Sworn to and subscribed before me this 13th day of September, 1960, Jewel R. Baker. (My commission expires 6/6/63.)

Compatibility Test Method Uses Paper Cups

New England's first blood bank was opened in 1938 – in Massachusetts Memorial Hospital, Boston. The blood blank has grown to be a busy place – an average of 3,350 blood transfusions are given each year at the hospital.

Under the direction of chief technologist Miss Ida Malootian, BB, ASCP, the Massachusetts Memorial blood bank has kept pace with the ever-increasing complexities of maintaining standards required for effective blood bank operation. In addition, Miss Malootian is constantly on the alert for new methods – more complete, more effective, or just easier to use.

A new method for blood grouping and compatibility testing worked out at Massachusetts Memorial's laboratory utilizes an ordinary 3-ounce waxed paper cup.

For this simple test, the sample of choice is unclotted venous blood, collected with dried potassium oxalate, ammonium-potassium oxalate mixture (Heller's mixture), or heparin.

Liquid anticoagulants, such as ACD or sodium citrate solution, impair the sensitivity of the test.

Fresh blood and stored blood, unless hemolyzed, are equally suitable for the testing of most of the blood group antigens, including A, B, C, D, Du, E, c, and e. The following blood group antigens are readily detected by antiserum of the appropriate specificity: A, B, C(rh′), C^w, D and Du(Rh_o), E(rh″), c(hr′), e(hr″), Kell(K), Kidd(Jk^a), Duffy(Fy^a), M, N, S, and s.

"Complete" (saline-reacting) as well as "incomplete" or "blocking" (albumin-reacting) antibodies have produced satisfactory reactions in the cup test.

The method used is simple, but effective. In routine ABO and Rh group testing, the bottoms of four labelled cups are coated with whole blood. In one cup one drop of anti-A serum is placed; in a second, one drop of anti-B; and in a third, one drop of anti-D.

One drop of 20-25 percent albumin solution, human or bovine, is added to the contents of each of these three cups. Two drops of albumin solution are introduced into the fourth cup.

The cups are allowed to remain undisturbed for two minutes and are then placed on their sides. During the following one or two minutes, the coated cup bottoms are examined for the presence or absence of agglutination.

Results obtained in the cup test are easily interpreted. The cup to which only the albumin was added serves as a control. If this test is positive, the appearance of agglutination in the remaining cups does not necessarily reflect a specific interaction between blood group antigen and antibody.

When such a reaction occurs, the albumin test should be repeated at 37°C. Partially immersing the cup in a shallow, covered water bath at 37°C. for two minutes prior to tilting will sufficiently control the temperature.

If agglutination does not occur, the blood grouping tests should be repeated, also at a temperature of 37°C. Under these carefully controlled conditions, any agglutination that occurs may be interpreted with validity as definite evidence of a specific reaction.

When agglutination occurs in the "albumin only" cup after incubation at 37°C., the reaction generally signals the presence of an attached globulin. In such cases, the results have the same significance as a positive Coombs test.

In such cases, another procedure must be substituted, employing mixtures of grouping serum and saline suspensions of red cells which are sedimented in test tubes.

An albumin test which is positive at room temperature and negative after incubation may indicate the presence of a "cold agglutination."

The paper cup method of testing for compatibility is also a simple procedure and has an added advantage in that the cup provides its own permanent record.

The bottom of one labelled cup is coated with whole blood from the donor; a second cup is similarly coated with blood from the patient. One drop of patient's plasma or serum is introduced into the cup

(*Continued on page* 69)

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For further information see postcard opposite page 134.

(*Continued from page* 67)

containing the donor's blood, and is followed by one drop of the albumin solution.

A similar procedure is carried out with the second cup, containing the patient's blood. Into this cup, one drop of donor's plasma or serum is added, followed by one drop of albumin solution.

Both cups are then immersed for two minutes in a 37°C. water bath, then removed, placed on their sides, and observed for the presence or absence of agglutination.

The absence of grossly visible agglutination in both cups is evidence of mutual compatibility of donor and recipient. This absence of agglutination also demonstrates the absence of attached globulin on the red cells of both individuals.

If either cup exhibits agglutination, the blood in question should be further tested with albumin alone, in the procedure already described.

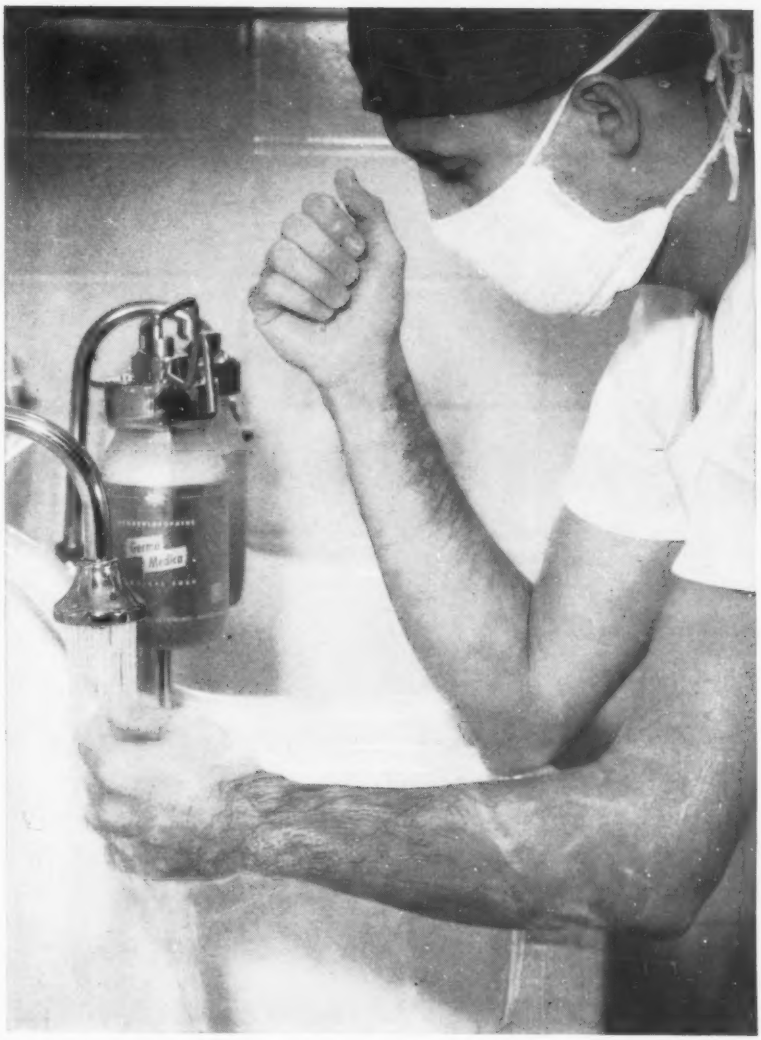
The appearance of agglutination in either, and the accompanying failure to demonstrate auto-agglutination in the corresponding blood sample, may be interpreted as evidence of a blood group antigen-antibody reaction.

According to Miss Malootian, the paper cup method has certain distinct advantages, not the least of which is the fact that the apparatus used is so inexpensive, convenient, and readily available.

Test cups can be partially immersed in a 37°C. water bath for the detection of warm-agglutinating antibodies. In addition, the water incubation retards drying of the specimen, inhibits rouleaux formation, and enhances the agglutination.

The presence of globulin coating, or red cell sensitization, is detected in the course of routine blood group testing by this method.

The paper cup method has the further advantage of speed. Cross-matching procedures and Rh-hr typing which might otherwise take from fifteen minutes to one hour to perform can be done effectively, completely, and accurately in about two minutes – with a permanent record.



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Pediatrics

American Academy of Pediatrics

.... Chicago October 17-20

The American Academy of Pediatrics drew an attendance of 4,035 persons to its 29th annual meeting. Topping last year's total by 400, the figure represented 1,491 members; 808 non-members; 344 guests—mostly ancillary personnel; 667 exhibitors; and 725 women, most of whom were wives or relatives of pediatricians.

George M. Wheatley, M.D., of New York City, was named president of the international medical association. He is also third vice-president of Metropolitan Life Insurance Co., where he is head of the division on health and welfare.

Elected president-elect was Carl C. Fischer, M.D., of Philadelphia. A practising pediatrician for 30 years prior to 1958, he is currently head of pediatrics at Hahnemann Medical College and Hospital, and director of health for Girard College, both Philadelphia institutions.

George M. Wheatley, M.D., right, newly elected president of the American Academy of Pediatrics, pins the badge of president-elect on Carl C. Fischer, M.D. Dr. Wheatley, of New York City, is vice-president and head of the division of health and welfare of the Metropolitan Life Insurance Co. Dr. Fischer, of Philadelphia, is head of pediatrics at Hahnemann Medical College and Hospital.

Surgical Emergencies of Newborn
Choanal Atresia, More Prevalent Than Noted, Can be Highly Lethal

In discussing respiratory emergencies of the newborn, we often focus attention on intrathoracic conditions such as diaphragmatic hernia, congenital pulmonary emphysema, esophageal atresia and pulmonary cysts. These are important; however, obstructions of the upper respiratory tract are also important.

The incidence of choanal atresia is higher than we presently suspect. Occlusion of the nasopharyngeal airway will not permit the normal synchronization of respiratory and swallowing mechanism and the baby will choke and aspirate. Death will result unless the condition is treated promptly. The performance of a tracheotomy is life-saving, and is followed by reconstruction of a normal nasopharyngeal air passage.

Examination of a child with obvious respiratory obstruction should include most careful visualization of the posterior pharynx and of the larynx. A rare but highly lethal abnormality is one which is probably related to the development of the thyroglossal duct, and may not be recognized until a post mortem is performed.

An important proportion of fatalities is also due to intrathoracic conditions. Diagnosis of esophageal atresia, tension cyst of the lung, diaphragmatic hernia or congenital lobar emphysema is not difficult: all show signs of dyspnea, teachypnea, often cyanosis.

Another important proportion of babies who will die within a few hours of birth are those with hernia. We all realize that death in the adult from complications of this condition are usually avoidable and viewed with alarm. The same aura of gravity should surround the death of the newborn. There is no doubt that a high salvage rate should be expected following surgical repair.

One thing on which emphasis should be placed in

(*Continued on next page*)

Above, left, William W. Belford, M.D., outgoing president of the American Academy of Pediatrics, presents one of the E. Mead Johnson awards to Robert A. Aldrich, M.O., of Seattle, for his research on Disorders of Pyrrole Pigment Metabolism.
In the center, Dr. Belford chats with the recipient of the Borden Award, Harold E. Harrison, M.D., of Baltimore. The award was given in recognition of Dr. Harrison's research and report on Vitamin D and Calcium and Phosphorus Transport.
On the right, Dr. Belford presents the second E. Mead Johnson award to Irving Schulman, M.D., of Chicago. This award by the pharmaceutical firm was in recognition of Dr. Schulman's research in the Stimulation and Regulation of Platelet Production.

hernia is the management of the lung on the affected side. We often hear that it appears hypoplastic and the anesthesia is unable to inflate it. I believe that more damage can be done by attempts to inflate it by producing emphysema or pneumothorax of the contralateral hemithorax. We should take the attitude that the lung is normal, and will function if left alone and allowed to expand gradually.—*David R. Murphy, M.D.*, associate professor, McGill University; surgeon-in-chief, The Montreal (Canada) Children's Hospital.

Simple Catheter Drainage of Ureters Dangerous, Can be Fatal

Though a distended bladder may be the problem, if masses are felt in each flank, they probably represent dilated kidneys, and nephrostomy tubes should be inserted at once. Sometimes the large renal masses represent a cluster of cysts replacing the kidneys. Until the day of kidney transplants, these infants will always die.

Since newborn babies are relatively inactive, whistle tip catheters with multiple perforations are not so likely to be pulled out. Simple catheter drainage is dangerous and can result in the death of the child. Surgical correction of the obstructing factors can be carried out when the infant is strong enough to tolerate the procedure. The important thing is for the physician not to be fooled by failing to recognize points of obstruction in the ureters.

Partial obstruction is frequently congenital "valves" across the urethra at the distal end of the verumontanum. Kidneys are ordinarily so badly damaged and discovered so late, that most of the newborn die and the condition is discovered only by autopsy. Nurses should be educated to feel the diaper of every newborn frequently during the first 24 hours to estimate if it is voiding well. If not, nephrostomy tubes should be inserted at once. Partial drainage is extremely dangerous in these young and fragile infants.

In deficient abdominal musculature with associated genitourinary anomalies, the baby has only a bag of soft, wrinkled skin over the abdomen. The cause is unknown, and club feet, missing limbs, multiple digits, cardiac vessel and gastrointestinal anomalies are frequent in this group.

These babies must have points of obstruction of the bladder neck relieved, and secondary points relieved surgically. Only after dilated ureters are moved back from the inguinal canals can orchidopexy be done. Careful maintenance in the form of dilations of urethra under anesthesia should be done at least every four months at first and at longer intervals later as the trouble subsides.

In exstrophy of the urinary bladder, groups doing reconstructive surgery have achieved considerable success in rolling up the bladder into a sac, inserting it back into the abdomen, creating a urethra, covering over the abdominal wall with large flaps from the rectus sheath, and repairing the abdominal wall by the extensive shifting of skin flaps from the sides of the abdomen to cover the defect.

Early operation is advantageous, and should be performed as soon as the child can tolerate six or seven hours of continuous operating. Waiting beyond three or four months may result in the bladder wall thickening with granulations and colagen fibers forming in the base, causing contractures.—*John K. Lattimer, M.D.*, professor of urology, Columbia University College of Physicians and Surgeons, New York City.

Decision for Surgery Difficult in Cases of Myelomeningocele

Problems which appear in the category of neurosurgery include myelomeningocele, hydrocephalus, subdural hemorrhage, depressed fracture, spinal injury and nerve injury.

Contraindications to surgery in myelomeningocele are gross brain defects or brain damage, and excessive hydrocephalus. The latter is present in 70 percent of all myelomeningocele cases.

Whether or not to operate on infants with the conditions is a very difficult decision to make. Sixty-five percent have an I.Q. over 80, and if it appears the baby has a good chance for intelligence, and good upper body development, we make an all-out attempt to help it realize its potential.

Of the total number of such patients, we have operated on 80 percent; the remaining 20 percent we considered not operable. Seventy-one percent survived two years or more, and this rate is being improved as we get children earlier.

Reasons for early surgery are lower morality, lower morbidity, earlier shunt, ease of surgery, facilities for handling, early passive immunity, normal stress resistance, less psychological impact, and reduced cost. By early, we mean within 24 hours.

Contraindications to surgery in cases of hydrocephalus: compensated, 27; excessive hydrocephalus, 12; infection, 9; excessive brain damage, 9; multiple malformations, 8; severe retardation, 3.

These babies are limp, will not cry; have scalp edema; depressed pulse and respiration; Weber's syndrome; convulsions; and tight fontanel. Treatment includes subdural taps; anticonvulsants; watchful waiting; surgical evacuation; and close observation for hidden clots.—*Martin Peter Sayers, M.D.,* assistant professor of surgery, Ohio State University; chief, division of neurological surgery, Children's Hospital, Columbia, O.

Results of Investigations of Constitutional Growth Retardation

An investigation was undertaken of 68 children with retarded growth and development without skeletal, metabolic and neurologic disturbances, or clinical manifestations of hypothyroidism and hypopituitarism. Criteria for diagnosis consisted of height age and bone age below chronologic age, normal serum protein iodine and/or 24-hour thyroidal radioiodine uptake, skull (sella) and long bones without abnormality, and normal neurologic examination. Results of intravenous insulin tolerance tests, Robinson-Power-Kepler diuresis tests, and urinary and blood steroids before and after ACTH were not statistically different from results in comparable normal children; these studies differentiated this group from other endocrinopathies associated with dwarfism.

Norethandrolone (Nilevar) was administered to 48 of these children, averaging 1.7 years duration. All gained in height: 92 percent registering a gain greater than the mean gain of 2.02 inches. All gained weight, with 77 percent registering a gain greater than the mean. Sixty-four percent showed a gain in bone age, with none advancing beyond the chronological age.

There was an improvement in appetite, and psychological changes were gratifying. Nausea and restlessness had disappeared. There were audrogenic changes of 24 percent of the males below 12 years of age, and in 33½ percent of the females under 12. Dosages were reduced, but discontinuance of the drug was not warranted. Use requires critical judgment, however, in males and females in or approaching puberty, despite encouraging results in height, weight and bone age.—*Matthew M. Steiner, M.D.,* assistant professor of pediatrics, Northwestern University Medical School; associate physician, Children's Memorial Hospital, Chicago, Ill.

Radiation Hazards

Pediatrician Has Three Roles in Controlling Use of Radiation

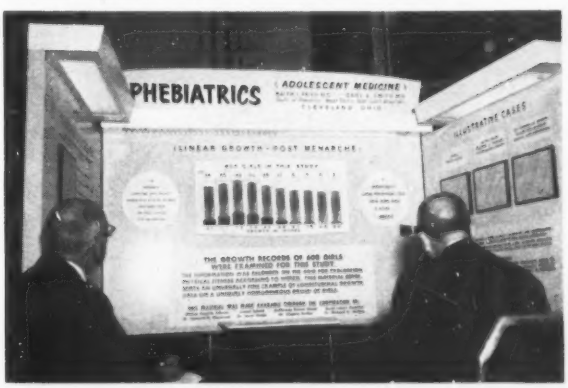
The first of the three roles the pediatrician must assume in the control of radiation is that of a possible user. Some pediatricians already use it, and the most important consideration is that it be used well. The second role is that of a referrer of patients, which entails responsibility as the person to decide it shall be used, and the responsibility of selecting the person who shall use it. The third is the role of an informed citizen and responsible physician, which entails knowing the levels of radiation in our environment, man-made and natural.

All the problems involved in the use of radiation involve judgment. There is no denying the possibility of harmful results versus benefits. This is not an unique situation, since harm versus gain is involved in everything we do—even to giving an aspirin tablet to a child.

(Continued on next page)

Ray W. Woehring (l.), of Wyeth Laboratories, and Robert H. Lennox, M.D., Cali, Colombia, S. A., inspect the scientific exhibit which focused upon upper respiratory infections in children, notably the common cold. The exhibit's charts and graphs outlined current research on the causes and susceptibility of the cold.

An exhibit on ephebiatrics, or adolescent medicine, described the findings of a survey dealing with the amount and maturity patterns of postmenarchal growth. Pediatricions Harold Rosenbaum (l.), Children's Memorial Hospital, Chicago, and Joseph Rafetto, Fitkin Memorial Hospital, Neptune, N. J., are the interested note-takers.



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There is a concept of a quantitative risk, and this is not too obscure, since we deal in units or roentgens, which we now term rems, which express the radiation absorbed rather than the amount to which the patient is exposed. There is, however, a tremendous range in radiation dosage, from a fraction of a thousandth of a unit to thousands of units.

In our natural background there are three or four rems. In medical, dental and certain plant environs there is an average per person of 4.5 to 7.8 rems, as against geneticists' reasonable limit of 13.1.

Children have before them all their procreational future. As pediatricians we ought to develop an observing eye. I recently saw a boy having his elbow x-rayed. The cone was so placed that the beam was also going to his other hand and his gonads.

Fluoroscopy is a touchy subject. I won't say don't use it, but it does represent a higher order of potential hazard, so it must be done properly. And you must satisfy yourself that there are definite reasons and values for using it. The advantages you know; the disadvantages include poor detail, dim image, lack of record, time for dark adaptation, and radiation exposure.

Whatever type of radiation we use, there is no excuse for not following the simple safety rules. Apparatus should be safety-tested, output checked. It is essential to adapt your eyes to the dark and to wear lead apron and gloves.—*Richard Hall Chamberlain, M.D.*, professor of radiology, University of Pennsylvania School of Medicine and Graduate School of Medicine, Philadelphia.

Low Level of Radiation Safest Since Accumulative Effect is Likely

In radiation, there is a chain of events, chemical and biochemical, and changes in cells that affect tissue and in turn affect the whole organism. There are so many hiatuses in this chain that it is difficult to come to conclusions regarding the specific dangers of radiation.

There is a dose response curve, and we can draw inferences from the character of the curves. The sigmoid curve is the most familiar. This says, in effect, that there is a level at which nothing occurs; thus we can do the procedure over and over again at this level.

However, a curve that begins at zero is likely to be accumulative, and the effect is exactly proportionate to the dose. It is important to assess this fact. Once you've made the assumption that response starts at zero, you will be on the safe side because you are aware that there is no level that does not produce effects.

If you arbitrarily select a certain level, you must balance the benefits against the hazards. If you go higher, you must be satisfied that benefits are that important in the given case. Whatever level you decide upon, the dosage should be the lowest possible.—*Hymer L. Friedell, M.D.*, professor of radiology, Western Reserve University; director, department of radiology, University Hospitals of Cleveland.

Abortion Laws, Hyaline Membrane Among Surgeons' Topics

The following abstracts are taken from talks given at the sessions on obstetrics and gynecology during the recent clinical congress of the American College of Surgeons in San Francisco. For other news of the meeting, see the report beginning on page 19. Abstracts of lectures from the postgraduate courses appeared in the November issue, pp. 75-77.

Panel Expresses Criticism Of Present Abortion Laws

Attorney Suggests Doctors Seek Changes in Existing Laws

In California, abortion is a felony unless it is performed to preserve the life of the mother. Obviously, all abortions are not performed with this dictum as a yardstick. To evaluate the reality of this law, case histories of 11 hypothetical cases seeking abortion were submitted to 29 major California hospitals (excluding those with obvious religious objections). The hospitals were asked whether they would approve abortions on these patients.

The hypothetical cases ran the gamut from the 15-year-old minister's daughter raped by an escapee from a mental institution to the patient with third-degree cardiac failure. Two cases were clearly within the California statute; two were borderline (suicide was a potential in one and Hodgkin's disease was involved in the other); seven were clearly illegal by California law.

Twenty-seven of the 29 hospitals replied to the questionnaire. There was no case that could not be done in at least one hospital. Eighty-five percent would have done those that were clearly legal; 60 percent were doubtful about doing any; 35 percent would have done those that were clearly illegal.

Fifty-eight percent of the hospitals worked with therapeutic abortion committees. When asked whether they thought they were restricting the activities of a physician who might bring disfavor on the hospital by performing an abortion, were supporting the state's law, or were acting as a brake on too liberal sex activity, the majority replied that they thought they were protecting the hospital from disrepute. Others believed they were preventing the exercise of a type of birth control.

Results of this study suggest that doctors have set up a procedure system of their own. They are willing to approve cases for abortion that conform with prevailing medical indications. Once a physician recognizes that he is setting up his own standards, it is time to admit that the law is ripe for rewriting. Physicians otherwise are practicing by courtesy of the district attorney.

As a guide for future legislation, it is suggested that hospitals wishing to perform therapeutic abortions set up committees according to accepted standards. These committees should be registered with the state department of health. Once an abortion is approved by a committee, it should be understood that it is legal. The onus is thus thrown on the state to show that doctors have acted in bad faith.

The vague cloak of illegality must be removed. A physician must recognize the social pressures involved when an abortion is considered; the 15-year-old girl raped by the school's football captain is the only one being punished when abortion is forbidden.

There are no immutable laws. State laws only reflect the wishes of the people. Organized medical societies should have some way of stating what can be done within the profession. The physician must recognize that he has a responsibility to the patient as well as to the state.—*Ralph J. Gampell, M.D., LL.B.*, Los Altos, lecturer in law, Stanford University School of Law.

Discussion

Q. What is the mechanism for changing a statute?

DR. GAMPELL: Build up pressures. Offer your state

(Continued on next page)

senator a model statute. Present the opinions and wishes of an organized medical group such as a county medical society.

Q. If no district attorney has ever challenged the abortion laws as they stand now, why change them?

DR. GAMPELL: It is true that no district attorney has ever challenged a hospital in regard to this law, but any one of them could do so tomorrow. The law is clearly stated, and members of a highly ethical profession should not be forced to operate courtesy of the district attorney. The law is not being enforced because society does not want it enforced.

Q. Does the law see any difference between therapeutic abortion and sterilization when pregnancy is not present?

DR. GAMPELL: The two are entirely separate legally. In four states, voluntary sterilization is illegal. It is legal in California without any requirement of therapeutic indication.

* * *

U. S. Abortion Rate Lower in Recent Years

There appears to be a marked change in both incidence and indication of abortions. On the whole, the incidence the country over appears to be decreased. In 1930, in Los Angeles County Hospital, abortions rated 1 for 160 live deliveries. In 1950, this was 1/8,383 deliveries.

Incidence varies with hospital location, ethnic groups and service classification. In New York's five boroughs, hospitals were studied from 1943 through 1947. The abortion rate was 5.1/1,000 live births. In 1958 this figure was 2.1/1,000. In white races, the rate was 2.9/1,000; in non-white, 0.6/1,000. Among Puerto Ricans, the rate was 0.4/1,000. In private hospitals, it was 5.2/1,000; in voluntary hospitals 1.9/1,000; on private services, 2.5/1,000; on service patients, 0.5/1,000.

Reason for abortion	*1951*	*1958*
Psychiatric	37%	62%
Cardiac disease	7.2%	4.2%
Tuberculosis	9.5%	3.6%
Hypertension	8%	3.9%
Rubella	3.5%	12.8%
Malignancy	2.9%	5%

The target in abortion is a change in physiology. Ideally, abortion should be allowed any time there is an indication from a medical standpoint—*C. Paul Hodgkinson, M.D.*, chairman, department of gynecology and obstetrics, Henry Ford Hospital, Detroit.

* * *

Cites Findings on Rubella As Factor in Abnormality

The profession is just beginning to understand fetal abnormalities. The results of studies of patients with rubella opened the door to the fact that there are extrinsic causes for such abnormalities. The casual anomaly resulting from a recessive gene is almost impossible to work out genetically. Extrinsic factors must be considered primarily.

An epidemic of rubella in North Carolina in 1958 helped to document the significance of this disease in relation to abnormalities in the infant or child. The 167 women who were known to have been exposed to rubella or to have contracted the disease were examined first in 1959 and again in 1960. (It is obviously impossible to recognize many abnormalities at birth; it may be necessary to watch the child's development to detect abnormalities in mentality, vision, and hearing.)

The figures resulting from this study are statistically weak but nevertheless important. Of six children delivered of women who had rubella in the first four weeks of pregnancy, three had severe abnormalities.

5 - 8 weeks	14 deliveries	2 abnormal
9-13 "	19 "	2 "
14-26 "	31 "	0 "
27-40 "	14 "	

The greatest risk appears to be for the woman who contracts the disease in the first four weeks of pregnancy—dating the age from the first day of the last menstrual period.

It is important to realize that the number of agents possibly responsible for abnormalities is increasing every day. X-ray, progesterone, and folic acid inhibition by drugs have been impugned. It is almost impossible to lay the blame for an anomaly on any one cause.—*Frank R. Lock, M.D.*, professor and director, department of obstetrics and gynecology, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N.C.

Discussion

Q. Is there any evidence that other viral diseases contribute to abnormalities?

DR. LOCK: Nothing suggests that other viral diseases cause a significant increase of abnormality.

Q. Do you continue to give immune globulin to a woman who has been exposed to measles?

DR. LOCK: Yes.

Q. Is there any contraindication to giving polio vaccine in the first trimester?

DR. LOCK: No hazard has been documented.

* * *

Less Restrictive Abortion Laws Found in Other Countries

If the present population growth continues, the next 50 years will see an increase to 230 million people. Economic stresses of overpopulation have not been acute in this country, but the day may come when we have to recognize that countries supporting less restrictive abortion laws have actually been more progressive.

The law varies greatly with time and place. In Sweden, sex education is a part of general basic education. Trained counselors are employed in schools. The sex code is democratic, and abortion laws are liberal. If a woman's physical or psychic state is threatened by childbearing or child care, she can be aborted. A victim of rape can be aborted. If there is a chance of either parent's transmitting in-

sanity, a serious disease or a physical handicap, the woman can be aborted. Application for abortion can be made either by the patient or a member of her family.

In Russia, abortion laws have changed many times. In 1955, the law prohibiting abortion was repealed. The position has changed four times in the last few years, but abortion presently is permitted to protect a woman's health and also to keep abortionists from going underground with all the unpleasant sequelae of abortions performed under less than ideal conditions.

In Poland, a woman's declaration to a physician that she is in a difficult physical, social or economic position is sufficient indication for abortion.

In China, abortion laws are new, but birth statistics showing a startling predominance of male births suggest that the practice of eliminating girl babies has been revived.

In Japan, 90 million people are compressed in an area roughly the size of California. The Japanese are a practical, highly adaptive people with a literacy rate higher than that of the United States. Ten percent of the licensed physicians in Japan are legal abortionists who consider themselves dedicated to improving racial eugenics and increasing opportunities for children at hand in a land that cannot support any more people.

India is rigidly opposed to abortion, but the government will give the equivalent of eight American dollars (a very large sum) to anyone requesting sterilization. — *Wesley T. Pommerenke, M.D.*, associate professor, obstetrics and gynecology, University of Rochester School of Medicine and Dentistry, Rochester, N. Y.

Plasmin Spray Effects Recovery From Hyaline Membrane Disease

Six premature infants with hyaline membrane disease recovered completely following treatment with human fibrinolysin (plasmin) given by aerosol spray. Treatment was started six to 12 hours after diagnosis. The children were treated continuously for three to seven days by vapor jets containing 20,000 units of plasmin. The usual antibiotics, oxygen, and aspiration treatment also were given. Improvement took place usually in the first 24 hours.

The six patients were discharged in satisfactory condition after an average hospitalization time of 12 days.

As a control we used seven cases in which the same diagnostic criteria and general adjuvant measures were used, but Varidase was employed as basic treatment. Four of the children recovered and three died.

No undesirable effects have been observed, either clinically or on the clotting system, even for periods of continuous administration up to seven days.

We also studied 32 normal prematures and 31 normal older children to determine the normal fibri-

(*Continued on next page*)

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nolytic activity of their plasmas. Of the healthy prematures, 71.8 percent showed some form of lytic activity; of the normal children, 38.4 percent showed fibrinolytic activity.

When the healthy prematures were given plasmin by aerosol, there was an increase of 67 percent in the fibrinolytic activity of the plasma. When the plasmin was administered by intravenous infusion, the increase was 75 percent.

The hyaline material found lining the functional respiratory surface of the lungs in infants who have died of this disease is composed mostly of fibrin. Awareness of this fact suggested to us the use of fibrinolytic agents in an effort to destroy this layer and effect normal gaseous diffusion.—*J. Leonel Villavicencio, M. D.*, attending physician in vascular surgery, Hospital Infantil de Mexico, Mexico City, and fellow in cardiovascular surgery, Peter Bent Brigham Hospital, Boston (Mass.) and West Roxbury (Mass.) VA Hospital; *Eduardo Jurado, M.D., Josefina Sagaon, M.D.*, and *Jesus Alvarez de los Cobos, M.D.*, Hospital Infantil de Mexico.

Thrombectomy Gives Good Results In Postpartum Thrombosis

Anticoagulation has effectively prevented propagation of the thrombus in acute iliofemoral venous thrombosis, but cannot prevent dislodgement of a thrombus already formed. Immediate removal of the clot might offer protection from embolism and should prevent the distressing late complications of the postphlebitic limb.

Immediate iliofemoral venous thrombectomy has been carried out in five women in the postpartum period. All were operated upon under local anesthesia with the use of abdominal pressure and distal leg pressure to extrude the black coagulum from the femoral venotomy. Further removal was carried out with especially adapted intravenous suction tips. Preoperative and postoperative venograms were made to confirm the diagnosis and to document the immediate results.

Although the follow-up periods are shorter than a year in most patients, the results have been uniformly good. Pain and edema have completely disappeared.

Until the thrombolytic agents have been more widely proved, every patient with acute iliofemoral thrombosis should have an immediate operative thrombectomy with full anticoagulation during and after the procedure.—*J. Alex Haller, Jr., M.D.*, department of surgery, University of Louisville School of Medicine, Louisville, Ky.

Lists Precautions for Using Pitocin to Stimulate Labor

We have given up using hormones, relaxin and releasin for the stimulation of labor, and now rely completely on intravenous Pitocin (oxytocin). In the patient with inertia, an increase in both intensity and frequency of uterine contractions is desired. Pitocin can effect these contractions but is too often administered at too high a concentration and at too rapid a rate. The maximum effect comes from minimal amounts.

Furthermore, this drug must be given with proper precautions. Two hundred forty uterine ruptures have been reported as a result of intravenous administration of Pitocin. Rules for its use should include: (1) Complete evaluation of the patient before the drug is ordered; (2) automatic shut-off of the infusion if the physician leaves the delivery room; (3) constant attendance of the patient, and (4) frequent checking of contractions and heart tone because fetal death from increased tonicity is not unusual.

Pitocin is contraindicated for use in the multipara who will rupture because of fibrosis and scarring, and in the patient with any obstruction to descent or any question of obstruction, disproportion, or malposition.

The physician must wait a full 30 minutes after beginning the infusion to evaluate the uterine response and then increase the flow only slightly if necessary. Once the infusion is started, it is not stopped if the woman goes into active labor. It is slowed down but kept going for one hour after the third stage. This prevents sudden relaxation from removal of stimulus and cuts down on blood loss.—*Ralph A. Reis, M.D.*, professor of obstetrics and gynecology, Northwestern University Medical School, Chicago.

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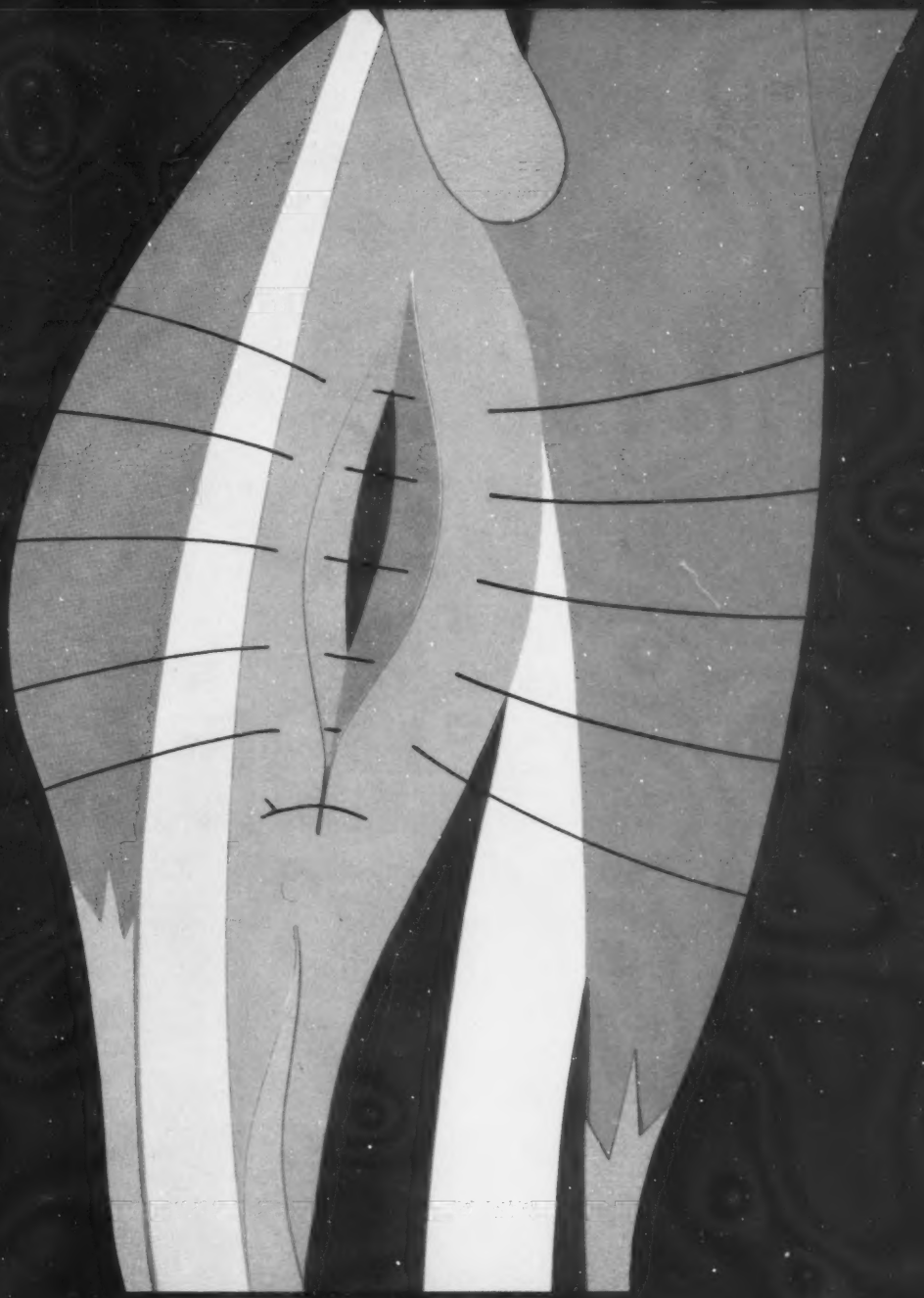

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Prevention of Cancer Dissemination During Surgery

Surgery for cancer is high on the list of operations at the 650-bed University of Illinois Research and Educational Hospital in Chicago. Usually it is performed daily. The morning TOPICS' reporter visited, three of the 11 patients operated upon were cancer patients.

The exhibit on the prevention of cancer dissemination, shown on the following page, is "a compilation of many things we have known for a long time," according to William J. Grove, M.D., associate professor of surgery at the University of Illinois College of Medicine. The exhibit was planned by Warren H. Cole, M.D., chief of surgery and immediate past president of the American Cancer Society; Dr. Grove; and Stuart S. Roberts, M.D., LeRoy Long, M.D., and Olga M. Jonasson, M.D., all residents in surgery.

"Our working philosophy," said Dr. Grove, "stems from a statement made by Dr. William Mayo in 1913. He said, 'Cancer should be treated like a focus of infection.' It is our hope that the exhibit will help doctors and nurses to further understand their patients. We want them to think of cancer in terms of bacteria within the patient, and to handle it as though it were.

"In our own procedures, the implications of this statement are emphasized over and over again; every doctor and every nurse is fully aware of the responsibilities they entail."

At the present time, more than one-half the patients having curative resections for cancer return with metastases and die. Undoubtedly, according to the information contained in the exhibit, microscopic metastases were already present in some of these patients at the time of treatment. In many cases, according to the surgeons' collective conclusions, certain phases of the initial management contribute to the dissemination of cancer.

Physical examination may disseminate cancer:

Manipulation during pelvic or rectal examination and palpation of solid tumors has been associated with showers of cancer cells in the blood stream during rectal examination, palpation of an abdominal mass, pelvic examination, and rupture of a malignant ovarian cyst during a pelvic examination.

Diagnostic procedures may disseminate cancer:

Massage to obtain secretions or the opening of vascular channels during biopsy have been associated with showers of cancer cells in the blood stream during curettage of malignant bone tumor, prostatic massage, uterine curettage, and curettage of uterine adenoacanthoma.

Operative measures may disseminate cancer:

Manipulation during skin preparation and mobilization of a tumor have been associated with showers of cancer cells in the blood stream. Contamination of operative areas by cancer cells has resulted in implantation recurrences. Examples are skin preparation over a breast tumor, operative manipulation of bowel or kidney, and local seeding of wound during radical mastectomy.

The mechanisms of dissemination are threefold: invasion, intravasation, and implantation.

Invasion: Many types of cancer are brought into contact with the circulating blood in invasion of the wall and penetration into the lumen of veins. In addition, invasion of lymphatic channels places cancer cells in the lymph for possible transport to veins.

Manipulation incident to physical examination or operation may dislodge an intravascular tumor into the circulation. An example is a tumor embolus recovered from the inferior vena cava during prostatic massage.

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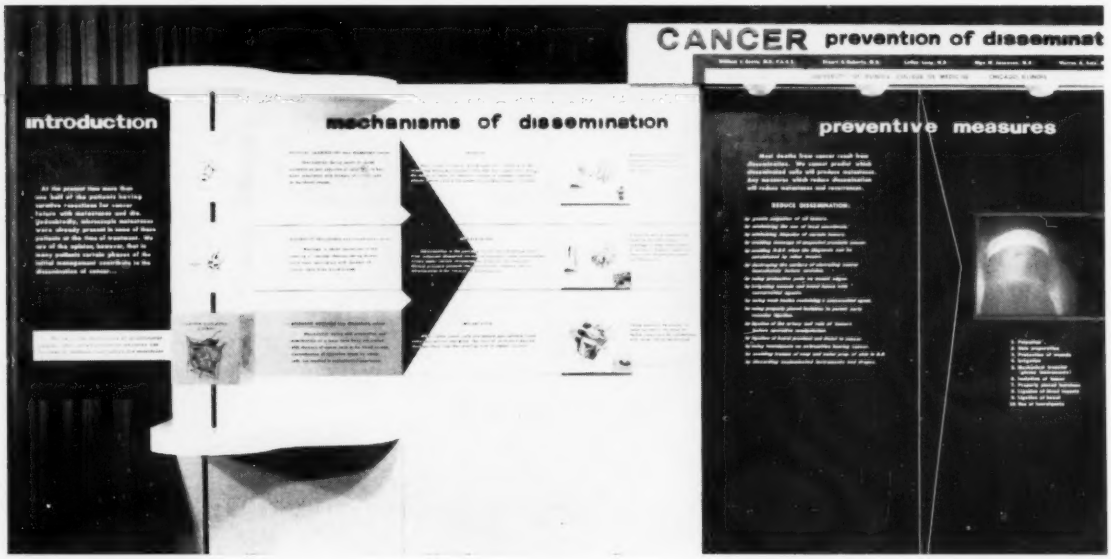


Intravasation: This process is the passage of cells into lacerated veins from adjacent disrupted normal or neoplastic tissue. Intravasation occurs under certain circumstances when the extravascular (tissue) pressure exceeds the intravascular pressure.

Procedures such as transurethral resection, incisional biopsy, or curettage of deep-seated tumors, in contrast to biopsy of superficial tumors, may disseminate cancer by intravasation. An example is a bone marrow-tumor embolus found within the pulmonary artery after bone curettage.

Implantation: When viable cancer cells are seeded upon suitable tissue, some may survive and grow. This type of recurrence must be distinguished from that resulting from incomplete excision.

During operation, the wound, the body cavities, or the lumen of hollow viscera may be contaminated with cancer cells by implantation. An example is a suture at a colon anastomosis surrounded by recurrent tumor.

Most deaths from cancer result from dissemination, but it cannot be predicted which disseminated cells will produce metastases. Any measures which reduce dissemination will reduce metastases and recurrences.

Here are the measures used and recommended by this surgical team:

1. Gentle palpation of all tumors during physical examination and operative manipulation.
2. Minimizing use of local anesthetic, thereby minimizing the possibility of intravasation and/or implantation.
3. Minimizing biopsies of certain tumors.
4. Avoiding massage of suspected prostatic cancer.
5. Avoiding D. & C. when the diagnosis can be established by other means.
6. Destroying the surface of ulcerating cancer immediately before excision.
7. Using protective pads on wound edges.
8. Irrigating wounds and bowel lumen with cancerocidal agents after resection.
9. Using wash basins containing a cancerocidal agent.
10. Using incisions properly placed to permit early vascular ligation.
11. Ligation of the artery and vein of a tumor before operative manipulation.
12. Ligation of bowel proximal and distal to cancer.
13. Using tourniquets on extremities bearing cancer.
14. Using antiseptic solution for skin preparation rather than the more vigorous soap and water preparation.
15. Changing instruments, gowns, gloves, and other items before moving from a cancer-contaminated area to a clean area.

Though all the precautions listed above are important to the operating-room nurse, and she must be fully conversant with each, numbers 9, 14, and 15 apply to her most specifically, according to Fannie Nofziger, operating-room supervisor.

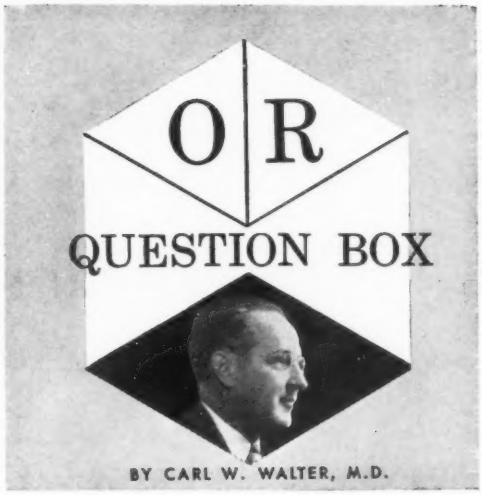
"Every procedure," said Miss Nofziger, "is prefaced by the unalterable law that we do not scrub the area with soap and water, but use an antiseptic solution. If a breast biopsy is positive, we have a completely different setup for the mastectomy. The patient is redraped, and sterile gowns, gloves and a compiete new set of instruments are used.

"Following any radical, all instruments are removed, the area is completely redraped, and we irrigate the wound with cancerocidal agents before the wound is closed."

Instructions to medical staff members and O.R. nurses for wound irrigation following cancer surgery are specific and in written form:

Irrigation of wounds with buffered 0.5% sodium

(*Continued on page* 92)



Assisted by Dorothy W. Errera, R.N.

Q. Is it correct to place soiled instruments directly into a washer-sterilizer, provided that a clean nurse prepares the sterilizer?

A. This is the exact purpose for which the instrument was designed. Contaminated instruments are collected into buckets or trays by the scrub nurse. Latches are released; cutting edges are protected from contact with other instruments, and the trays are loaded in the sterilizer. Detergent and water softener are added; the sterilizer is closed; *cold* water is run in to dissolve blood and protein soil. The steam is turned on. In approximately eight minutes, the instruments are clean, sterile and ready for use in another case. This cycle includes two minutes exposure to a temperature of 270°F.

Q. Shouldn't surgeons remove their gloves between cases? A full scrub between cases is certainly to be preferred to having them answer telephones and do other things wearing dirty gloves.

A. The habit of idling between cases in soiled gloves and gowns is esthetically unappealing and bacteriologically unsound. In modern practice, the daily and consistent use of suppressants for cleaning the skin substantially reduces the bacteria so that the individual who is free of gastrointestinal infection or upper respiratory disease can safely disinfect his hands between cases with a simple wash using the same germicidal detergent or soap. The bacteria picked up in casual contacts, exclusive of those associated with disease, are usually transients which are easily removed by washing and rinsing.

A broad-spectrum, single-shot germicide is applied to the skin both after the initial scrub and after subsequent cleaning between cases, to destroy surface bacteria. This germicide can also contain bacteriostats to aid in suppressing the growth of bacteria deep in hair follicles and sweat glands.

Q. Should gloves be destroyed after a septic case? It isn't possible to position them properly in an autoclave when cleaning up after a case.

A. Terminal sterilization of gloves is possible because they are wet when placed in the sterilizer. Gross soil is rinsed from the gloved hands in the glove basin. Gloves are peeled off the hands to avoid contaminating the skin and are left in the glove basin. The scrub nurse squeezes out excess water before she arranges them in sterilizing trays for terminal sterilization. The gloves are wet throughout, and as they are heated the moisture in folds and creases is turned to steam.

Q. Should sterile supplies on a window sill or in an open cabinet in a room in which a septic case has been done be autoclaved before use in another case?

A. Bacteria are present in moisture—sputum, pus, body discharges, contaminated solutions, and so forth. Splashing is an obvious source of contamination of supplies. Bacteria are also present in dust, lint, and dirt particles. They are not present in the air itself, but air currents are the vehicle for transporting bacteria when they are disturbed from surfaces on which they have settled.

In a clean operating room where floors are sanitized daily; where soiled sponges are discarded into proper containers rather than to the floor; where pus and body fluids are contained in suction systems, and where activity and conversation are kept at a minimum, wrapped sterile supplies in cabinets or on shelves at the periphery of the room can be considered safe for use in subsequent cases.

A frequently unsuspected hazard is the enthusiastic "damp duster" who may inadvertently include the bottoms of sterile packages in a swipe at a shelf.

Q. The orderly transporting patients from wards to surgery is a problem because it is not practical for him to change clothes and shoes before and after every patient.

A. The transportation orderly's route ends with entry to the recovery room or interchange area. The hospital bed or stretcher is not taken into the operating room proper. The patient is transferred to the operating table in the recovery room or interchange area and wheeled to the operating room. The table's casters are cleaned daily with a sanitizing detergent, and personnel working between the two areas disinfect the soles of their shoes many times daily so that tracking of dirt is minimized.

A large mat, wet with germicide, recessed in the floor at the entrance to the operating-room suite, is positioned so that rolling equipment and transient personnel must pass over its surface. This limits very effectively the amount of hospital dirt tracked into the suite. [*This technic is illustrated in a 16-mm sound film, "Hospital Infection Control," reviewed in the October issue of HOSPITAL TOPICS, pp. 86-87.*—ED.]

Disposable Plastic 'Isolator'

Surgery in a germfree environment—with the operative area shut off under a plastic "isolator"—is the goal of a team of surgeons at the Walter Reed Army Medical Center, Washington, D. C.

The Walter Reed experiments represent an attempt to apply the technic of the germfree laboratory to the hospital operating room. The isolator was described in a paper presented at the clinical congress of the American College of Surgeons by Stanley M. Levenson, M.D., Ole J. Malm, M.D., Richard E. Horowitz, M. D., and William H. Moncrief, Jr., M.D., of Walter Reed, and P. C. Trexler, department of biology, University of Notre Dame.

The flexible, disposable isolator, which is glued aseptically to the surgically prepped operative skin area, is designed to achieve absolute exclusion of the wound from the ordinary operating-room environment, and, conversely, the exclusion of the patient and the surgical team from the wound environment. The surgeon operates through the sterile plastic chamber.

This method has been used successfully in operation on animals in an ordinary operating room. The isolator environment and the wounds have remained sterile throughout the operations. The technic is now ready for trial on patients.

The patient and the surgical team are outside

for Surgery

the isolator; the anesthetist has unlimited access to the patient's head and extremities. Only the wound and underlying tissues and organs come into contact with the isolator's interior sterile environment.

Helmet-jacket combinations are worn by the surgeon and his assistants (see illustrations), instead of the conventianl arm-length gauntlets used in surgery on germfree animals. They have their own air supply. Visibility, ventilation, and comfort are good, and provision is made for any necessary changing of gloves.

Instruments and supplies are inside the isolator, but their supporting tables and stands are outside. Additional supplies can be moved in through a "split-seam" sterile transfer.

Rapid transfer of unanticipated supplies needed to meet an emergency, the surgeons said, can be made through an opening designed to take advantage of the slight positive pressure of the air inside the isolator.

Sterile air enters the isolator through the same type of fiberglass filter used in the germ-free laboratory. The effectiveness of the filter in holding back micro-organisms has been proved repeatedly.

The disposable isolator, containing instruments and supplies, may be sterilized with ethylene oxide or by steam under pressure, depending on the type of plastic used.

"Despite 'aseptic' technics now practiced in hospitals, 'clean' elective operations too commonly end in wound infections, creating urgent problems for patients, surgeons, and hospitals," the surgeons said, in explaining why they decided to develop the isolator.

"Many of these infections are caused by contaminations of the wound by exogenous pathogenic micro-organisms in the environment during operation. The sources of these organisms are well known; they come mainly from the respiratory tracts of the surgical team and from circulating air, and serve to make descriptions of 'operating aseptically' upon man wishful fancies, not accomplished realities."

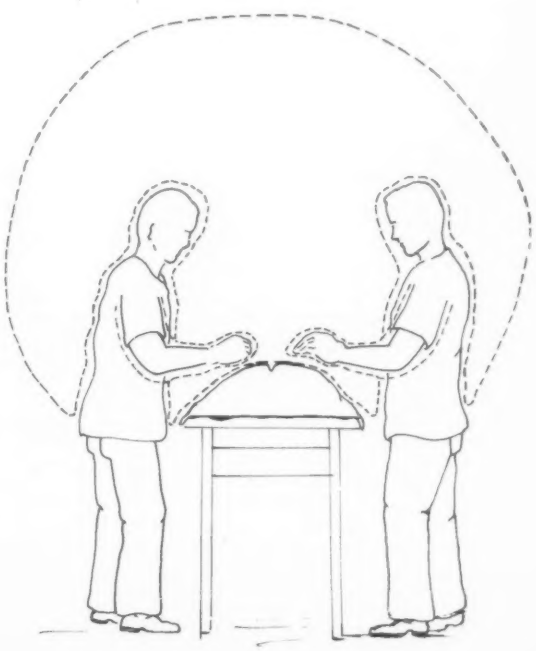
In germfree laboratories in the United States, Sweden, and Japan, ordinary, contaminated laboratory animals are routinely operated upon under completely sterile conditions, the Walter Reed group pointed out. Sterility has been proved by repeatedly negative wound cultures and by the successful delivery by cesarean section of near-term fetuses which grow to adulthood and remain germfree throughout their lives.

In animal surgery, the animals usually are in heavy stainless steel tanks, equipped with gauntlet-type gloves. Tanks big enough for man would be awkward and impractical; the anesthetist could not take care of the patient adequately, and the gauntlets would permit only limited movements of the operating team.

However, there is another type of isolator which has been used successfully in the last two years for the rearing of germfree animals. The isolator used at Walter Reed is a modification of this flexible plastic isolator, which was designed by Mr. Trexler at the University of Notre Dame. Helmet-jacket combinations were substituted for the conventional arm-length gauntlets, to permit free and easy movement of the surgeon and his assistants.

There are potential uses for the isolator outside the operating room, according to Dr. Levenson. It can be used for the isolation of patients who are particularly susceptible to infections, such as patients exposed to serious whole-body irradiation, and for isolation of patients with serious infections, to prevent spread of their pathogenic micro-organisms.

"For these applications," he said, "the patients would be inside the isolators. The air pressure would be positive for the former, negative for the latter."



Infections, Scleral Buckling, Mastoid Surgery Among O. and O. Topics

The 65th annual session of the American Academy of Ophthalmology and Otolaryngology was held in Chicago October 9-14. Following are abstracts of some of the papers presented.

Surgeon, Bacteriologists Can Work Together to Find, Control Infections

A surgeon working with a clinically oriented bacteriologist can establish the cause of hospital infections, trace their spread, select and guide the treatment, and set up effective measures for prevention.

Three main sources of operative infection are bacteria harbored by the members of the operating team, usually bacteria of the respiratory tract; bacteria harbored by the patient, especially those of the conjunctival sac and the external ear canal; and bacteria capable of producing inflammation, present in some solutions recommended for their supposed sterilizing properties.

These sources can be detected preoperatively by laboratory procedures and can be controlled before or during surgery by existing technics. This problem is not new, but there are some new aspects of it which the medical profession is making a maximum effort to correct.—*Henry F. Allen, M.D.*, Boston.

Many Hospital Staph Infections Occur Postoperatively, Study Shows

Reduction of staphylococcal infections in hospitals can be achieved much more effectively by protecting certain susceptible patients than by trying to control the whole hospital environment.

Such infections occur most often postoperatively. A study made at the Johns Hopkins Hospital in 1959 showed that 70 percent of infections were in postoperative wounds, although only 40 percent of the patients in the hospital were surgical patients.

Postoperative infection occurred most commonly in patients with neoplastic disease or burns. The type of operative procedure seems to influence whether or not infection occurs. The highest attack rates were in patients treated with radical neck dissection for carcinoma of the neck, and in patients after amputations, many of which were done because of neoplastic disease, and after pneumonectomy, done mainly because of carcinoma of the lung. Whether or not postoperative infection occurs appears unrelated to the length of the operation. Infection does occur more often in older persons.

Staphylococcal infections in nonsurgical patients also occur more frequently in patients with certain types of illnesses, particularly cancer, diabetes mellitus, cirrhosis of the liver, dermatitis, and systemic lupus erythematosus.

Good surgical care is probably the best means now available for reducing staphylococcal infections in hospitals. Present antibiotic therapy is inadequate, and sterilization of air, surfaces of rooms, or human beings is not likely to be effective, because of the ubiquitousness of the organisms.

To control the problem of staphylococcal infection, we must find not only new antibiotics, but means of increasing resistance of susceptible individuals to bacterial invasion.—*Leighton E. Cluff, M.D.*, The Johns Hopkins Hospital, Baltimore.

Precautions Can Reduce Complications Of Scleral Buckling Procedures

Scleral buckling procedures result in fewer motility complications than in the past, but the incidence could be still lower.

The procedures, frequently used to treat retinal detachment, involve applying massive doses of diathermy to the sclera or, more recently, imbedding a piece of tubing in the sclera and applying the diathermy to the trough of the tubing. Sometimes it is necessary to detach one or more rectus muscles at their insertions to gain adequate exposure.

All these steps in the technic may lead to scarring, the greatest factor in complications which cause limitation of ocular movement. The three major causes of muscular imbalance are: (1) fixation of the muscle to the globe and/or conjunctive due to a massive reaction to surgical trauma; (2) a forward pull of the tubing which displaces the normal functional directional pull of the muscle; and (3) interference with the nerve supply, so that the eye may not move in one or more directions.

To reduce the incidence of complications, the surgeon should treat the muscles gently when severing and replacing them, maintain as much as

possible of the Tenon's capsule in the normal position, avoid unnecessary scleral damage, use a minimum amount of diathermy, and rehabilitate the patient's binocularity as quickly as possible.

If a postoperative motor anomaly does occur, and it cannot be corrected prismatically, surgical repair should be done to restore normal binocular function.—*Hunter H. Romaine, M.D.,* New York Eye and Ear Infirmary, New York City.

Technic for Obliterating Cavity, Reconstructing Auditory Canal

Elimination of the mastoid bowl, with its objectionable sequelae, may be routinely achieved in modified radical and radical-type mastoid and tympanoplastic surgery. The external auditory canal is reconstructed and the mastoid cavity obliterated. Combined endaural and postauricular incisions are used.

The technic is employed when it is necessary to exenterate the mastoid cells and remove the posterior bony wall of the external auditory canal. It may be used in conjunction with single or multiple-stage tympanoplasty as well as modified radical or radical mastoidectomy. Cavities resulting from previously performed mastoidectomies, tympanoplasties, and fenestrations have been obliterated.

Following the mastoidectomy, the tip of the mastoid process is removed when the bone is well pneumatized, or partially removed when the bone is of the diploic type, which may have a nonpneumatized mastoid tip. The postauricular skin is then undermined posteriorly and superiorly. By sharp dissection a soft tissue flap of an appropriate size is formed from the subcutaneous tissue, fascia, sternomastoid muscle, and lower portion of the temporal muscle. The soft tissue pedicle is inferior, and the flap is formed principally by the sternomastoid muscle and its fibrous attachments.

This flap is trimmed to obliterate the mastoid bowl from its lower extremity up to the tegmen just posterior to the lateral semicircular canal. Occasionally a flap of temporal muscle with its pedicle posteriorly is used to aid in obliterating the sinodural angle.

Appropriate packing is added to the external auditory canal area, the incisions are closed, and a mastoid dressing is applied.

A skin flap from the external auditory canal partially covers the posterior wall of the external auditory canal, which is now formed by the muscle flap. The tegmen medially and soft tissue laterally form the roof of the canal. A delayed split-thickness skin graft is applied to the unhealed portion of the canal eight to 10 days postoperatively, in the doctor's office.

The technic has been used in 40 cases.—*Frederick R. Guilford, M.D.,* associate clinical professor of otolaryngology, Baylor University College of Medicine, Houston.

Describes Use of Photocoagulation In Treating Retinal Detachment

Photocoagulation is effective in destroying some tumor growths within the eye. It is most frequently used as an ancillary method of treating retinal detachment. It has no known benefits in treatment of most forms of intraocular inflammation, cataract, or glaucoma.

The intense, sharply-focused light rays are generated by a highly complex instrument which directs the light through the patient's pupil. The ophthalmic surgeon controls the amount and direction of the light while he observes the light and its immediate effect. The light is so powerful that it is usually used for approximately one second.

This method of treatment is easier and quicker to use than conventional methods currently in use. It may cause hemorrhage within the eye, but it does not cause cataract.—*Dohrmann K. Pischel, M.D., San Francisco; Graham Clark, M.D., New York City; and Paul A. Cibis, M.D., St. Louis.*

Lymphatic Drainage Not Always Homolateral, Experiment Shows

Lymphatic drainage from the three major areas of the normal larynx is predominantly homolateral, but are found that flow is reversed when unilateral lymphatic obstruction is induced. Our experiments were prompted by the need to re-examine the classic opinion that lymphatic drainage is homolateral almost without exception. Recent clinical reports have shown unexpected contralateral metastases from carcinomas of the opposite hemilarynx when treated by radical neck dissection.

We injected radioactive gold into either the supraglottic, cordal, or infraglottic region of several test animals. Completely unilateral drainage occurred in 56.7 percent of the animals; bilateral drainage, usually slight, occurred in 43.3 percent.

However, when we induced unilateral lymphatic obstruction in test animals, by means of complete surgical removal of the right carotid sheath and its contents, sparing the carotid arteries, and then injected radioactive gold in the same manner into the right hemilarynx, lymphatic drainage was predominantly contralateral.

This condition was still present 16 weeks after the operation, and there was no evidence of lymphatic regrowth.—*Louis W. Welsh, M.D., John J. Welsh, M.D., and Frank M. Behlke, M.D.,* State University of Iowa Hospitals, Iowa City.

Overcorrection After Surgery Needs Re-evaluation Before New Operation

When surgery for esotropia results in overcorrection, the surgeon must re-examine and re-evaluate the problem on the basis of diagnostic findings following the overcorrection.

The idea of always "undoing what was done"

(Continued on next page)

should be rejected. The surgeon should plan his approach to the new problem just as though no previous surgical intervention had occurred. It frequently is advisable to revise an overcorrection by making an attack on unoperated muscles.

A study of cases in which overcorrection resulted shows that the overcorrection may have certain characteristics which point the way to proper management. In such cases, the exotropia often measures greater at one distance of gaze than another.

The results of a carefully planned second operation are gratifying. When an overcorrection is corrected properly, binocularity frequently follows.—*Edmond L. Cooper, M.D.*, Detroit.

Necrosis May Follow Retinal Detachment with Circling PE Tube

Extensive necrosis of the retina, ciliary body, and iris can be a serious complication of a retinal detachment operation with circling polyethylene tube.

In two cases studied at the Armed Forces Institute of Pathology, intraocular hemorrhage and mature cataracts developed after the operation. Atrophy and inflammation of the globe led to enucleation within three months.

The necrosis is considered to be the result of vascular damage. Factors responsible for this vascular insufficiency include detachment of the recti with severance of the anterior ciliary vessels and compression of branches of the vortex vein, with resultant edema of the choroid anterior to the tube. Other factors may be the application of diathermy to the long posterior ciliary vessels, and obstruction of the retinal vessels secondary to chorioretinal scarring or compression by the tube.

The following precautions are recommended: (1) detach only as many rectus muscles as is necessary for adequate exposure of the operative field; (2) if a second operation is necessary, try to detach the same muscles that were detached in the first operation; (3) make the area of scleral resection as small as possible; (4) when planning a large lamellar resection, try to avoid the area crossed by both long posterior ciliary arteries; (5) do not apply diathermy excessively to the bed of the resection, particularly around the long posterior ciliary arteries.—*Milton Boniuk, M.D., and Lorenz E. Zimmerman, M.D.*, Armed Forces Institute of Pathology, Washington, D.C.

CANCER DISSEMINATION

(*Continued from page* 86)

hypochloride solution will be performed at the conclusion of the following surgical procedures:

1. *All* radical mastectomies. This includes both treated and control cases receiving nitrogen mustard. *All palliative* mastectomies and those *over age 70*, or *recurrent* cases also will be irrigated.

2. All other definitive cancer operations performed on the general surgical services will be designated as irrigation or control cases according to the posted selection chart. This will include all head and neck, axillary and groin dissections, and procedures for soft-tissue malignancies. It does *not* include gastrointestinal and intrathoracic malignancies. Controls will receive *no* irrigations.

Preparation of solution for wound irrigation (this buffered 0.5% sodium hypochloride solution must be used within 15 minutes of its preparation):

1. To a sterile 1,000 ml. graduated container, add (a) 200 ml. of sterile distilled water, the temperature of which should not exceed 40° C. (b) Then add the contents of bottle A (liquid) and bottle B (powder), and (c) add more distilled water to make a final volume of 1,000 ml.

2. Gently agitate the solution so the powder will dissolve (stir gently). It is now ready for use, and must be used within 15 minutes. (Note: Bottle A contains 106.6 ml. of a 5.25% sodium hypochlorite solution. Bottle B contains 10.7 g. of sodium bicarbonate. Bottles A and B are taped together. The contents of both A and B bottles must be used to prepare the solution.)

3. Using the Addressograph plate, stamp the attached card and give the date and surgical procedure performed.

Method of wound irrigation:

1. At the conclusion of the surgical procedure just prior to suturing of the wound, remove all skin towels, laparotomy pads, and sponges from and about the wound.

2. Wash all blood and debris from the skin surrounding the wound area and wipe the skin surface dry.

3. All members of the surgical team and the scrub nurse change gloves. All previous instruments and splash basins must be discarded.

4. The scrub nurse now uses the wound closure instrument pack and prepares the wound-irrigating solution.

5. With blunt retractors the wound is opened widely and irrigated with approximately 750 ml. of the solution. Use an Asepto syringe and irrigate all parts of the wound including the skin edges, and the skin surface around the wound. With the first two syringefuls, attempt to quickly place the solution in contact with all parts of the wound. Continue to irrigate all portions of the wound for an absolute minimum period of four minutes. The elevated skin flaps serve to form a collecting pocket. When overflow occurs, aspirate with clean suction tip. Wipe the skin surface around the wound with sponge moistened with the solution. Then close the wound in the usual manner.

AORN Congress Program Highlights

Communications, group leadership, advances in surgery, the use of audiovisual aids, and legal problems of operating-room nurses will be some of the featured topics at the eighth national congress of the Association of Operating Room Nurses in San Francisco, February 13-17, 1961.

MONDAY, February 13:

Morning session: "The Healthy Circulation of Ideas," by the Rev. Joseph D. Munier, Ph.D., professor of sociology, industrial ethics, St. Patrick's Seminary, Menlo Park, Calif.

Afternoon sessions: "The Dynamics of Enthusiasm," by Sister Paulina Mary, Ph. D., chairman, department of psychology, College of the Holy Name, Oakland, Calif.; "The Dynamics of Group Leadership," by Walter J. Tait, supervisor of training, Standard Oil Co. of California, San Francisco; "Urology Made Interesting in the O.R.," by John A. Hutch, M.D., clinical professor of urology, University of California School of Medicine, San Francisco, and "Role of the O.R. Nurse in Urological Surgery," by Maybel Lagree, R.N., H. C. Moffitt Hospital, San Francisco; "Maintaining Standards and Quality Care in the Operating Room," by Kenneth B. Babcock, M.D., director, Joint Commission on Accreditation of Hospitals, Chicago.

TUESDAY, February 14:

Morning sessions: "Professionalism vs. Unionism," by A. Lionne Conta, R.N., associate executive director, California State Nurses' Association; a program featuring lectures on safety measures in handling blood, by Mrs. Berniece Hemphill, Irwin Memorial Blood Bank of the San Francisco Medical Society; in handling pathological specimens, by Livia Ross, M.D., head, department of pathology, VA Hospital, Oakland; and in positioning the patient for surgery, by Philip J. Bailey, M.D., associate clinical professor of surgery (anesthesiology), Stanford Univ. School of Medicine, Palo Alto, Calif.

"Reconstructive Surgery of the Hand" will be discussed by Donald R. Pratt, M.D., assistant clinical professor of surgery, Stanford University School of Medicine, Palo Alto. Richard A. Shepard, M.D., Oakland, will talk on "Neoplasms of the Skin." Role of the O.R. nurse in these cases will be presented by May Lauderdale, R.N., St. Luke's Hospital, San Francisco, and Avis D. Gibson, R.N., Dr. Shepard's nurse.

An all-day program on "Keys to Better Understanding in the Operating Room" will be presented by Louis Bernstein, Ph.D., director of psychological services, Jewish National Home for Asthmatic Children, Denver, Colo. Appearing with him will be LCDR. Helen L. Brooks, NC, U. S. Naval Hospital, San Diego, Calif.

Afternoon sessions: A discussion on AORN activities, by a panel including Edith Dee Hall, R.N., executive director of the national AORN, and representatives from three AORN groups; a session on surgery of the ear, featuring talks by Francis Sooy, M.D., University of California School of Medicine, San Francisco, and Viola Ireland, R.N., St. Luke's Hospital, San Francisco; and a discussion of student nurse experience, by a speaker from the National League for Nursing.

WEDNESDAY, February 15:

Morning sessions: A panel discussion on "The Law and You," moderated by Joseph F. Sadusk, M.D., San Francisco. Panel participants will include a surgeon, an attorney, an anesthesiologist, and a hospital administrator.

Edwin Schottstaedt, M.D., chief, department of orthopedics, Shriners' Hospital, will speak on spinal fusion. A lecture on "Traumatic Injuries of the Face" will be given by Harry J. Buncke, Jr., M.D., San Mateo, Calif. Joan Glade, R.N., Children's Hospital, San Francisco, will speak on the O.R. nurse's role in spinal fusion.

One-hour sessions on the use of audiovisual materials will be presented continuously from 8:30-11 a.m. and from 3-5 p.m. by Maj. Kathleen W. Phillips, ANC, Walter Reed Army Medical Center, Washington, D. C. Only 100 persons will be admitted to each session.

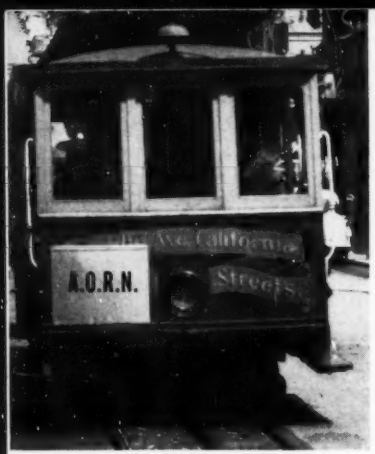
Afternoon sessions: A symposium on surgical instruments, with speakers from four companies which manufacture surgical instruments, and a panel discussion on education of surgical technicians, presented by Sacramento City College and the Sutter General Hospital, Sacramento, Calif.

THURSDAY, February 16:

Morning session: "Organizing Thought and Action to Improve Operating-Room Nursing Performance" will be the theme of this program, to be presented the AORN national committee on education. Administrative supervision, aseptic practices, and simplification of technics will be discussed.

A new film, "Positive Patient Safety Through Simplified Operating-Room Nursing Technics," will have its premiere at this session. It is the third in a series of films sponsored, produced and distributed by the American Cyanamid Co., Surgical Products Division.

Afternoon session: Carl W. Walter, M.D., associate clinical professor of surgery, Harvard Medical School, and surgeon, Peter Bent Brigham Hospital, Boston, will be the featured speaker at this final session. His topic has not yet been announced.



IT'S TIME TO MAKE YOUR HOTEL RESERVATIONS!

8th Annual Congress of the AORN
San Francisco, Feb. 13 - 16, 1961

A HOUSING BUREAU has been organized for the Association of Operating Room Nurses, in San Francisco. Since all requests for rooms are handled in chronological order, it is recommended that you send in your application as quickly as possible.

All reservations should be cleared through this bureau. All requests must give definite date and approximate hour of arrival and names and addresses of all persons who will occupy rooms requested.

In making reservations, please use the blank below, indicating your first, second and third choice (see list on reverse side). Because of the limited number of SINGLE ROOMS AVAILABLE, you will have a better choice of securing accommodations in the hotel you prefer if your request calls for rooms to be occupied by two or more persons.

NO MINIMUM RATES, or any specific rate within the full price range quoted, can be guaranteed when your reservation is confirmed. Hotels make every effort to give you the requested rate. However, this is governed by prior check-outs and availability of such rooms on the date of your arrival.

ALL REQUESTS SHOULD BE ACCOMPANIED by a DEPOSIT CHECK for $10.00 per room made out to the AORN HOUSING BUREAU. Due to the existing crowded conditions, hotels cancel unclaimed reservations by 4:00 p.m. Therefore, a deposit is requested to ensure that your reservations will be held on your arrival date – whatever the hour. Your deposit will be credited to your account. PLEASE DO NOT SEND CASH.

CANCELLATIONS: Cancellations must be received 15 days prior to the meeting for refunds of your deposit to be made by the hotel. If sufficient time is not allowed for the hotel to reassign space, all of the deposit is forfeited.

LATE REQUESTS: Since our housing contracts for hotel bedrooms expire 10 days prior to the opening of the conference, APPLICATIONS RECEIVED LATER THAN January 25 (15 days prior to the opening date of the conference) WILL BE RETURNED. In such cases, please select your own hotels and write to them direct.

ALL RESERVATIONS WILL BE CONFIRMED IF REQUEST IS RECEIVED NOT LATER THAN January 25.

MAIL TO:
AORN HOUSING BUREAU
Room 300, 61 Grove Street
San Francisco 2, California

(Note: Single rooms are very scarce. Please arrange to share a twin bedroom with another.)

PLEASE MAKE RESERVATIONS NOTED BELOW:

First Choice Hotel_____ Single Room_____

Second Choice Hotel_____ Double Bedroom_____

Third Choice Hotel_____ Twin Bedroom_____

Parlor, bedroom suite_____

Arrival_____ at_____ A.M._____ P.M.

Departure_____

NAMES OF ALL OCCUPANTS:
(Please bracket those sharing a room)

ADDRESSES:

_____ _____

_____ _____

_____ _____

_____ _____

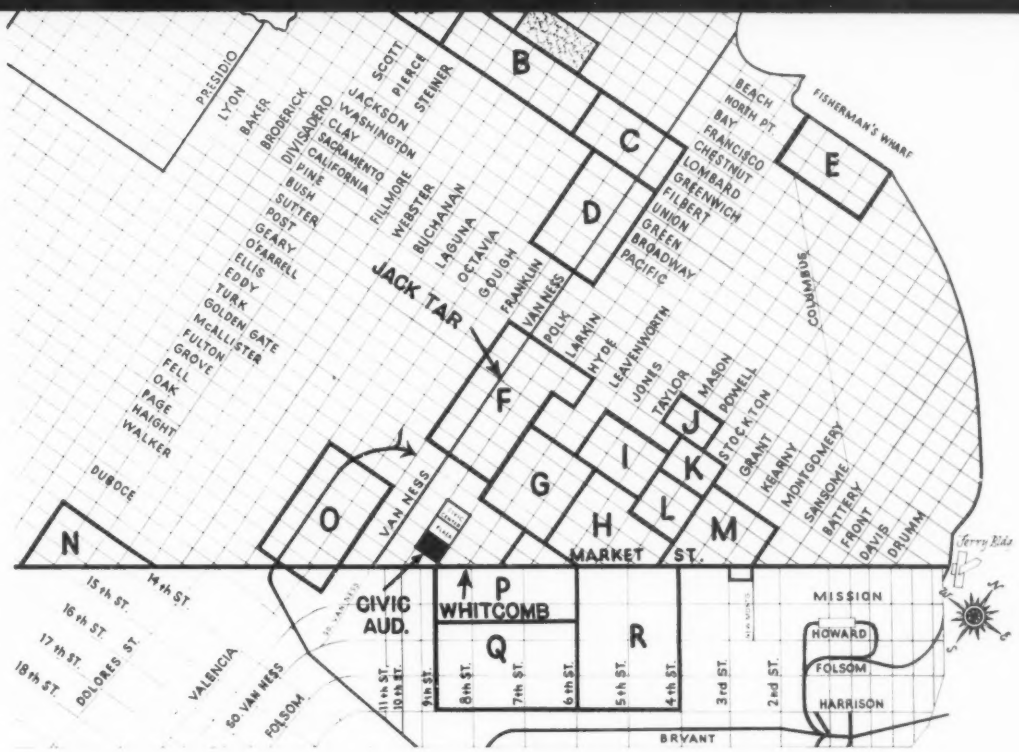
Check for $_____ payable to AORN HOUSING BUREAU is enclosed. Please enclose a self-addressed, stamped envelope.

MAIL CONFIRMATION TO: (please print or type)

(Signed)_____

Address_____

City_____ State_____



ZONE	HOTEL	SINGLE	DOUBLE	TWIN BEDS	PARLOR SUITES
G	Alexander Hamilton	$10.00-14.50	$13.00-18.50	$13.00-18.50	$20.00-60.00
I	Bellevue	8.00-10.00	10.00-12.00	12.00-15.00	20.00-25.00
I	Beresford	4.75- 5.50	6.00- 6.75	6.50- 7.00	
M	Beverly Plaza	7.00- 8.00	10.00-12.00	10.00-12.00	22.00
H	Californian	8.50-11.00	10.50-13.50	11.50-14.00	22.00-25.00
I	Canterbury	10.00-17.00	12.00-19.00	14.00-20.00	25.00-40.00
F	Carlton	5.00	7.00	8.00	
K	Cartwright	6.50- 8.00	8.00	9.00	
I	Cecil	7.50- 8.50	9.50-10.50	11.00-12.00	
L	Chancellor	7.50	9.50	10.50	
H	Clift	14.00-21.00		17.00-23.00	
K	Colonial	8.00-12.00	12.00-15.00	15.00-20.00	20.00-25.00
I	Commodore	6.00-12.00	8.00-14.00	10.00-16.00	
D	Continental Lodge	10.50-16.50	12.50-18.50	14.50-22.50	24.50-52.50
H	Don	6.50- 7.50	7.50- 9.00	10.00-12.00	
M	Drake Wiltshire	10.00-11.00	12.00-14.00	15.00-16.00	25.00-35.00
I	El Cortez	8.00-10.00	10.00-12.00	11.00-14.00	20.00-26.00
F	Embassy	6.50- 8.50	7.50-10.50	8.00-12.00	
J	Fairmont	16.00-23.00	20.00-27.00	20.00-27.00	39.00-68.00
L	Fielding	6.00- 8.00	8.00-10.00	9.00-12.00	20.00-25.00
L	Franciscan	7.00	9.00	12.00	18.00
I	Gaylord	8.00	10.00	12.00	25.00
H	Golden State	5.00- 6.00	7.00- 8.00	8.50- 9.00	
K	Grant	5.50	8.00	9.00	
D	Holiday Lodge	14.00-20.00	16.00-22.00	16.00-22.00	25.00-50.00
J	Huntington	11.00-16.00	14.00-20.00	15.00-25.00	30.00-50.00
F	Jack Tar	14.00-24.00	14.00-24.00	16.00-24.00	48.00-82.00
L	King George	6.00- 8.00	8.00-10.00	10.00-14.00	20.00
G	La Salle	6.00	7.00	8.00	15.00
F	Leland	4.00- 6.50	5.00- 8.50	7.00-10.00	
L	Manx	8.00-11.00	10.00-12.00	11.00-13.00	20.00-25.00
J	Mark Hopkins	17.00-21.00	21.00-25.00	21.00-25.00	40.00-75.00
I	Maurice	6.50- 9.50	8.50-11.00	9.00-12.00	18.50
H	Olympic	5.50- 8.50	7.50-11.00	8.50-10.00	
H	Oxford	7.00- 8.00	8.00- 9.00	9.00-10.00	
R	Pickwick	5.00- 7.00	6.00- 9.00	6.00- 9.00	
L	Plaza	7.50-11.50	9.50-13.50	10.00-14.50	18.00-20.00
F	Richelieu	6.00-12.00	8.00-15.00	10.00-16.00	20.00-25.00
H	Roosevelt	5.00- 8.00	7.00- 9.00	9.00-10.00	
L	St. Francis	12.00-23.00	14.00-22.00	17.00-26.00	30.00-55.00
G	Senate	5.00- 6.00	6.00- 7.50	7.50- 9.00	
G	Senator	5.00	6.00	7.00	
P	Shaw	4.50- 5.00	6.00- 7.00	8.00- 9.00	16.00-18.00
M	Sheraton Palace	8.75-16.50	13.85-20.50	13.85-20.50	25.00-75.00
L	Sir Francis Drake	11.00-16.00	13.00-17.00	16.00-22.00	35.00-50.00
L	Spaulding	6.00- 8.00	7.00- 9.00	8.00-10.00	
L	Stewart	7.00-12.00	9.00-14.00	11.00-18.00	26.00-30.00
L	Stratford	4.50- 5.00	6.00- 7.00	7.00- 8.00	
M	Sutter	5.00- 7.00	7.00- 9.00	8.00-10.00	
P	Whitcomb	10.00-12.00	11.00-16.00	12.00-16.00	25.00-60.00
I	Worth	7.00	8.00	9.00	

ZONE	MOTEL	SINGLE	DOUBLE	TWIN BEDS	PARLOR SUITES
D	Amigo	10.00	12.00	14.00	22.00
F	Auditorium Travelodge	8.00-10.00	10.00-13.00	12.00-16.00	
R	Bay Bridge Downtown	8.00-12.00	12.00-14.00	14.00	18.00
Q	Baywood	8.00	9.00	9.00	
N	Becks Motor Lodge	9.00-12.00	10.00-14.00	12.00-14.00	
D	Broadway Manor	8.00-12.00	10.00-16.00	12.00-18.00	25.00
C	Cable	12.50-17.50	14.50-25.50	16.50-30.50	22.50-35.50
B	Capri	14.00-18.00	14.00-18.00	16.00-20.00	28.00-32.00
F	Caravan Lodge	14.00-18.00		18.00-22.00	28.00
F	Civic Manor	10.00-14.00	12.50-14.00	14.50-18.50	
O	City Hall	7.00	8.00	10.00	
Q	Coronet	10.00	14.00	14.00	
A	De Ville	10.00-12.00	12.00-16.00	14.00-18.00	20.00-30.00
O	Downtown	7.00- 8.00	8.00- 9.00	10.00	
D	Doyle	7.50-14.50	8.50-21.50	10.50-24.50	12.50-28.50
D	Holiday Lodge	14.00-20.00	16.00-22.00	16.00-22.00	25.00-50.00
A	Lanai	7.00-12.00	8.00-14.00	9.00-15.00	
B	Manor	7.00-12.00	8.00-14.00	9.00-14.00	
A	Marina	6.00- 8.00	6.00- 8.00	7.50- 9.00	7.50-10.50
O	Market St. Trav.	8.00-10.00	10.00-12.00	12.00-14.00	
P	Mart	12.00	12.00	14.00-16.00	18.00-22.00
D	Nob Hill	8.00-14.00	10.00-16.00	12.00-18.00	22.00
F	Oasis	12.00-14.00	14.00-16.00	12.00-15.00	20.00-40.00
B	Plantation Inn	8.00-18.00	10.00-20.00	14.00-22.00	15.00-24.00
C	Rancho Lombard		6.00	11.00	30.00-36.00
F	Richelieu	6.00-12.00	8.00-15.00	10.00-16.00	20.00-25.00
F	Safari	10.00-12.00	12.00	16.00	28.00-30.00
C	Van Ness	8.00-12.00	10.00-14.00	12.00-16.00	16.00-22.00
E	Wharf	10.00-14.00	14.00-18.00	16.00-26.00	20.00-28.00

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Spiner, David R., and Hoffman, Robert K.: "Method for Disinfecting Large Enclosures with B-Propiolactone Vapor." *Appl. Microb.* 8:152; May 1960.

Disinfection of large areas with liquid disinfectants is tedious and the results may be uncertain because great expanses of surfaces are difficult to handle when uniform application is necessary. Corrosion and damage to finished surfaces are also unpleasant sequelae.

A gaseous germicide which would permeate a whole area would be ideal if it could be contained in that area long enough to sterilize. It should leave no deposits or residues on surfaces and should be non-corrosive.

Beta-propiolactone appears to fill these latter requirements and its vapors have been shown to be sporicidal, bactericidal, rickettsidal, virucidal. It has been used to disinfect a two-story army barracks; a furnished hospital room with wall-to-wall carpeting, furniture, books, television, etc.; and a surgical suite.

Its efficiency was measured by planting spores of *B. subtilis var. niger* in 31 locations throughout a ward. After two hours exposure to the chemical vapors, only one sample remained unsterile and the contamination level on that one has been reduced 99.99 percent.

The chemical is toxic and rigid precautions are essential.

The commercial grade lactone which contains 97 percent BPL is recommended because it is cheaper than purified grades and is non-flammable and non-corrosive. The chemical is stored at refrigerator temperatures in chemically clean containers to prevent the formation of residue producing agents.

The room or area to be disinfected need not be air-tight but large cracks should be sealed off with tape. Ventilating and air-conditioning systems are shut off and adjoining rooms are protected from seepage of the chemical. There should be a separate means for ventilating the area after treatment. Cabinets and drawers are opened. Electric fans placed around the room help to circulate the vapors.

The vapors must be maintained above 75° F. and the relative humidity at 70 percent at least. The level of relative humidity is more critical than temperature and below 70 percent, efficiency decreases rapidly. A vaporizer can be used to maintain humidity or a continuous fine spray may be necessary.

Concentration and exposure are important. Two to four milligrams of BPL are used per liter of air for two hours. If a room has many absorptive surfaces — rugs, drapes, overstuffed furniture — more chemical is needed. For an ordinary laboratory, one gallon for 16,000 cubic feet is adequate; for a furnished room one gallon is used for 12,000 cubic feet.

A commercial insectide spray is good for dispensing the chemical. The spray must be fine so that there is no "raining." An inefficient spray or a too high concentration of chemical will result in vapor condensate which can be destructive to some surfaces.

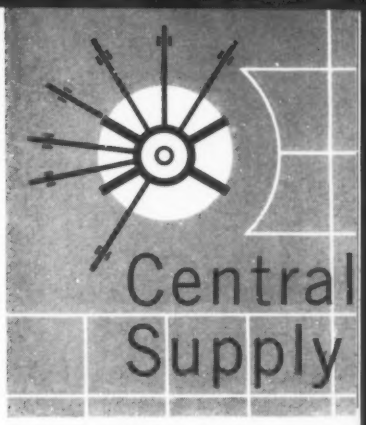
If an electric powered atomizer is used, it can be located in the room and controlled from outside with a master switch.

After two hours, doors and windows are opened. Care must be taken to see that vapors are not exhausted into adjoining rooms. A day of aeration is usually adequate; if ventilation is forced, less time is necessary. The room is ventilated until the odor is gone or is unobjectionable.

Toxic levels were measured in mice. Death resulted after two hours exposure to 0.36 mg./L. of air and after two hours exposure to 0.72 mg./L. The lowest detectable concentration is 0.05 mg./L. and 0.1 mg./L. is intolerable for longer than five minutes. The chemical is very irritating at a concentration just above detectable limits and below the acute toxic level. So in a sense, it can be its own warning device. When no discomfort is experienced in the presence of residuals of vapor, it can be considered safe. A chemical test is also possible.

Personnel involved in routines with the chemical should wash well after each procedure to avert possible skin irritation. Repeated exposure should be avoided because there is a possible carcinogenic factor.

If it is necessary to enter a room before it has been completely aerated, a gas-mask with charcoal canister and gas impermeable clothing tied at wrists and ankles must be worn. Each exposure should be limited to a few minutes. Outer clothing should be removed promptly after exposure and replaced with clean clothing after a thorough cleansing shower.



Disaster Planning for the CSR

By Margaret K. Schafer, R.N.

Because of the author's knowledge of both central supply department operation and hospital disaster planning, the editors of HOSPITAL TOPICS *have asked her to write this special article on the role of the central supply department in planning for a disaster.*

When Miss Schafer was a nurse consultant in the Division of Hospital and Medical Facilities, U. S. Public Health Service, she wrote a number of articles and lectured frequently on efficient operation of the central supply department. Subsequently she became chief nurse, health office, Federal Civil Defense Administration. In this position she also traveled and lectured extensively. She has left government service and is now living in Santa Barbara, Calif.

A carefully planned and efficiently operated hospital central supply service is essential to care for disaster victims properly.

Every central supply supervisor should have a plan to operate the central supply in time of disaster —natural or enemy-caused. There is no difference in the hospital needs following a natural disaster or an enemy-caused disaster, except in magnitude and types of injuries and illnesses. Also, there is no difference in the types of patients cared for following a tornado or the explosion of an atomic bomb, except for the radiation injuries.

The substantial difference between the two types of disasters is the number of casualties, and the proportion and types of injuries and illnesses. When we think of providing care for thousands of sick and injured people, the problem seems impossible, but when we consider the number of patients that could be cared for in one hospital it is not impossible, and realistic plans can be made.

Plans must be made for the existing hospital with an expanded patient capacity, and for an emergency hospital set up in another building, either for the expansion of services or in lieu of the regular hospital building.

Steps in Planning

Every hospital should have a disaster committee. The central supply supervisor should be a member of this committee, and participate in the over-all hospital disaster plan as it affects problems of central supply. There should be a detailed plan for each department. The central supply supervisor prepares this plan for her department.

Planning requires interviews and consultations with other hospital staff members, such as physicians, nursing-service supervisors, the housekeeper, the central stores director and the pharmacist. Other central supply supervisors and medical supply representatives may also welcome being consulted.

Written Plan

The plan must be written. Every effort should be made to keep it simple, concise, and practical. The written plan also serves as an operating guide during disaster.

Objectives

The objectives of the plan are to provide a guide for organizing and keeping the central supply department in a "disaster readiness" state, and to provide an operating guide for the department.

Services

The central supply services are usually the same during disaster as in normal hospital operation with a markedly increased load. It has been estimated that if necessary the average hospital can expand to three times its normal capacity—that is, a 200-bed hospital could expand to accommodate 600 patients. If any of the department's services are to be suspended or additional services expanded or added, it should be indicated in the plan and provisions made accordingly.

Departments

Any changes in the departments or outside hospital organizations to be served during disaster should be determined.

Area Needs

If a large number of disaster patients are admitted to the hospital, the central supply may require an additional room to prepare supplies — preferably near the central supply area. The designated expansion room should be agreed upon by the hospital disaster committee, and should be noted

(Continued on next page)

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in the total hospital disaster plan. Also, the plan should indicate the equipment that should be made available for this room when it is converted to central supply use.

Materials

A list should be prepared of supplies and equipment that would be required for a sudden influx of patients, with the estimated quantities for different numbers of patients, such as: 25-50-100-200. This list should note the types of injuries from different types of disasters: for example, train wreck, explosion, tornado, floods, food poisoning.

The list should be checked with the usual inventory on hand in the central supply department and central stores to determine how long the amount on hand would probably last, and when additional quantities should be requisitioned. The requisitioning point should be indicated on the list. As stated above, the type and amount of supplies and equipment are dependent upon the type of injury or illness and the treatment used.

An assumption on casualties from an atomic bomb is that 50-60 percent of the injuries would be burns, 25-30 percent would be traumatic injuries, including fractures, and during the immediate post-attack period 10-25 percent would need treatment for radiation sickness, obstetrical or other medical surgical conditions.

Another list should be made of the special disaster kits or boxes with the purpose and contents of each. Disaster kits to consider include: tracheotomy, poisoning, burns, first-aid dressing, suturing, fracture.

Matching funds for reserve disaster supplies are available from the federal government's civil defense contribution program. Information about this program can be obtained from local or state civil offices or from the Office of Civil and Defense Mobilization, Battle Creek, Mich.

Supplies may be scarce during disaster. A hospital may have to operate for some time with the supplies it has on hand. It may be impossible to replenish supplies or obtain specific items. If this country suffers enemy attack, all medical and surgical supplies would be critical and scarce. Therefore, every effort must be made from the beginning of the emergency to economize and improvise. It is a good idea to list substitute materials and equipment and alternate methods of preparation.

Also, utilities such as heat, light and water may be curtailed or lacking. Procedures that could be used preceding and following disaster and in emergency situations should be developed and outlined in the written plan. Conservation of water requires careful planning.

Staffing

The number of additional staff that would be required for different increased patient loads should be determined and the sources of volunteers or additional paid employees should be explored. Volunteers who would be available for disaster duty should be trained. Untrained people are little help during disaster.

The hospital auxiliary, Boy Scouts, Girl Scouts, Red Cross workers, and high school or college students are possible sources for disaster personnel.

A work schedule should be planned to cover more than the first 24 hours. During the initial stage of any disaster a large number of persons are needed and are usually available. Sometimes replacements for the initial staff are difficult to find. Therefore, as soon as possible some workers should be relieved and planned periods of rest and relaxation assigned. This is necessary for efficient operation over a long period of time.

Each staff member should be assigned specific duties and alternate duties. It is important to have more than one person equipped to perform each essential job—including the position of supervisor. During disaster it may be impossible for hospital personnel to get to the hospital, and unfortunately they sometimes become disaster victims.

Implementation

After the disaster plan is completed and approved by the hospital disaster committee and the hospital administrator, it should be

put in the central supply procedure book or a separate loose-leaf folder marked "Disaster Plan." It should be kept where it can be referred to by the central supply staff and hospital authorities at any time.

The written plan is only the first step in disaster preparedness. To be effective, the plan must be a workable part of the department's program. All staff members must know its contents, especially their own functions and responsibilities. A disaster orientation and training program should be conducted for the staff, employees, and volunteers. This program should include discussions and demonstration of the department's program, the hospital disaster plan, and the pertinent community plans.

Protection and care of the individual and his family before and during a disaster should be stressed to assure maximum safety and effectiveness of each employee. Each staff member should be encouraged to refer to the written plan, especially to sections referring to his specific duties and responsibilities. Some practice sessions are valuable and can be held without disrupting the routine of the department and the hospital.

The special disaster kits or boxes should be assembled or their contents available with instructions for assembling them rapidly if needed. Sterile supplies in the kits should be checked at specific stated times and resterilized as indicated.

Emergency Hospital Service

The central supply supervisor should be prepared to operate a central supply service in a building not usually a hospital, such as a school, church, hall, or warehouse. A school is considered best because of the floor plan and the available utilities.

To help meet the need for hospital services in time of disaster, the federal government has procured and stored about 2,000 civil defense emergency hospital units. Each unit contains the essential supplies and equipment to set up and operate a 200-bed emergency hospital. Most of the units are stored under the custody of the states in all parts of the country; some are stored in federal warehouses, and others are lent to the states for training and display.

A complete unit contains about 370 different items packed in about 500 packages or crates. The entire unit can be transported in one large truck. Each package or crate is numbered and labeled to indicate the group to which it belongs and the area of the hospital building it should occupy. The majority of the medical and surgical supplies are labeled for the central supply, which would also serve as central stores.

The expendable supplies would probably be sufficient to operate the hospital about 36-48 hours. Replenishment supplies are stored for delivery to the hospitals when needed.

If possible it is desirable to have three small adjoining rooms for central supply: one room for unpacking and storage, one for preparation, and one for sterilization and storage of sterile supplies. Each room should be about 20 x 30 feet. If the three rooms are not available, a large room should be selected and areas designated for the above units or functions. If possible the preparation room should have running water, and the unpacking and storage room should have easy access to delivery service from outside.

The central supply should be near but not adjoining the operating-room suite, because the sterilizers are heated with open gas flames which could cause an explosion if near the anesthetic agents or fumes.

In arranging the rooms the basic principles of work flow for efficient operation and good aseptic technic apply.*

There is no furniture with the stored hospital unit for central supply. Desks, tables, and chairs found in the building may be used. Packing boxes of the supplies and equipment may be used for shelves and storage cupboards. They may also have to be used for tables and stools.

The following equipment should be procured or improvised:

1. In the *preparation room*, where supplies and equipment are cleaned, sorted, assembled, and wrapped for sterilization:
   a. 1 sink with running water (if available) or a table with containers of water
   b. 1 table for disassembling and sorting soiled articles
   c. 1 table for cleaned equipment.
   d. 2-3 preparation tables for assembling and sorting clean supplies and equipment
   e. 6 stools or chairs
   f. 1 table for the cleaning area.

2. In the *sterilizing room*, where supplies are sterilized and stored:
   a. 1 table for nonsterile packages
   b. 1 table for sterile packages (cooling table)
   c. 1 table for boiling-type sterilizers
   d. 1 table for sterile supply storage (autoclaves and boiling-type sterilizers are included with the hospital unit).

3. In the *reserve storage and unpacking area*, where boxes and crates are unpacked and supplies put on shelves or delivered to the preparation area or other hospital departments:
   a. Storage shelves or cupboards (may be the packing boxes)
   b. 1 or 2 tables and chairs.

There are six boiling-type sterilizers and nine pressure steam sterilizers (autoclaves) in the hospital unit. The autoclaves are a pressure cooker-type sterilizer fired with gasoline or liquid gas. Since this type of sterilizer is not used in present-day hospitals, practice and training in assembling and operating it is highly recommended. A central supply supervisor may be able to obtain a sterilizer from the local civil defense office for training purposes.

When an emergency hospital is assembled for immediate use, the central supply should be set up and begin operation first, because casualty care and most medical, surgical and nursing care will await a flow of sterile supplies.

Central supply personnel are essential people during disaster. Only careful planning, orientation, and training will assure their maximum effectiveness.

*See "Central Supply—Economy and Efficiency," by Margaret K. Schafer, HOSPITAL TOPICS, April, 1952, pp. 27-30.

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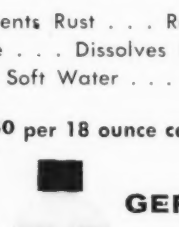

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Preparation of pyrogen-free parenteral solutions can be done safely in most hospitals, according to Stanley Marcus, M.D., professor of bacteriology, University of Utah College of Medicine, Salt Lake City.

For emergency purposes, alone, a solutions preparation room should be considered a necessity in every hospital, Dr. Marcus believes. The fact that a solutions room exists has salutary value at many levels, he declares.

However, the solutions preparation program should be integrated with the purchase of commercial solutions, he emphasizes.

"I am not convinced that it is either desirable or possible for most hospitals to prepare all or even a major portion of the solutions they must use. . . . I think that it is unlikely that in-hospital solutions preparation will ever markedly affect the commercial producers."

In a hospital's decision on how it should handle parenteral solutions, problems of personnel should be more important than technical factors, Dr. Marcus believes.

For determining possible pyrogen contamination of hospital-made solutions, Dr. Marcus and his associates have developed a bacteriological culture method which is useful as an alternative to the official U.S.P. method employing rabbits. The culture test was devised for use in hospitals, Dr. Marcus says, because clinical laboratories are able to perform the procedure easily, inexpensively, and accurately. The same cannot be said of the rabbit test.

The latest results in studies of the bacteriological test for pyrogens were discussed in a paper presented by Dr. Marcus before the American Association of Bioanalysts in June, 1960, and in an article in the *Journal of the American Pharmaceutical Association* by Dr. Marcus and Carl Anselmo and Joanna Luke, who are associated with him in the department of bacteriology at the university and at Latter Day Saints Hospital, Salt Lake City.

The culture method was compared with the rabbit test on solutions prepared in the experimental laboratory, in the hospital, and in the plant of a parenteral solutions company.

On the basis of their results, the authors believe that a culture test, performed on bottled samples of completed products, immediately before sterilization, is a feasible test for potential pyrogenicity.

The object of their studies was to determine how many bacteria, added as counted units, were necessary to make a standard parenteral or lavage solution pyrogenic. They found this number to be far in excess of the number that contaminate solutions prepared under ordinary environmental circumstances in an American hospital.

"If rigid cleanliness of equipment is maintained, if U.S.P. grade chemicals from an ethical American chemical company are used with freshly distilled water during a working day, it is virtually impossible to wind up with a pyrogenic solution," Dr. Marcus declared in his talk before the American Association of Bioanalysts.

In a typical production set-up, Dr. Marcus pointed out, fewer than 5,000 org./liter were added. He and his associates found that a viable count of less than 10/ml., or 10,000/liter, will never be associated with a pyrogenic solution.

(Continued on next page)

STILL TOPS IN QUALITY AND ECONOMY

STOPPERLESS® WATER BOTTLES by SEAMLESS

An *original* by Seamless. Still tops in quality, Stopperless is made for long-term economy second to none. To ensure long life the neck rubber is compounded daily—the neck clamp is made of stainless steel formed to permit easy loading of both water and ice.

For simplicity of use, patient comfort, plus the economy of long product life, order Stopperless Water Bottles by Seamless. Leading hospitals throughout the country do.

HOSPITAL DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN.

Freshly prepared solutions of saline, dextrose, and Ringer's lactate rarely contain more than 3,500 org./liter.

Sources of bacterial entry, Dr. Marcus explained, are:

1. Contaminated container, including piping to final flask
2. The water
3. The chemicals
4. Stoppers and tubes that may be handled by attending personnel.

1. **The container.** In the block tin or stainless steel container, with simple union joints which are cleaned and hose-steamed each day, there is no place for bacteria to grow, Dr. Marcus said.

2. **The water.** "We have found," he commented, "that distilled water from standard stills made in the U. S. is sterile as delivered.

"Long ago, Dr. (F. R.) Seibert enunciated the concept that 'a bacterial count of a water may not be a true index of its pyrogeniticity.' This hypothesis applies to water which has been allowed to stand for indefinite periods — usually in dirty tanks. The hypothesis does not apply to freshly distilled water, kept for no longer than a working day, during which time solutions designed for parenteral use are prepared and sterilized."

3. **The chemicals.** "We have tested 20 lots of U.S.P. grade chemicals, NaCl and dextrose, from two large American chemical companies and found the viable bacterial content to be of the order of 1 or 2 microbes per gram. This is a maximum," Dr. Marcus said.

4. **Stoppers and tubes handled by personnel.** There is some contamination from this source, Dr. Marcus said.

In a parenteral solutions preparation plant which the group visited, the highest bacterial count was 3,500/liter in the solutions examined, all of which proved negative by the accepted rabbit test.

In the rabbit test, three rabbits are injected intravenously with the solution to be checked, 10 ml./kg., usually about 35 ml., and changes in the temperature are recorded. The base temperature before injection must be between the established normal limits of 38.9 - 39.8° C.

Temperature is recorded within 15 minutes after the injection and one to two hours after injection. A rise of 0.6° C. or more for each of the three or a total rise of 2.1° C. or more for all three is adjudged a presumptive positive reaction.

In the bacteriological test, samples of solutions (at least 100 ml.) were taken prior to autoclaving and passed through Millipore filters, type HA. Each filter was then aseptically transferred to a blood agar plate and incubated at 37° C. to yield estimates of the numbers of living organisms present in the samples before sterilization. Colony counts were made after 48 hours incubation.

The most common contaminants of distilled water and of the prepared solutions were found to be Achromobacteriaceae, which, on original isolation, required at least 48 hours to grow out.

It has been found, Dr. Marcus pointed out, that at least 1,000 per ml. of the most pyrogenic bacteria must contaminate a solution, which is then sterilized by autoclaving, before it will yield a pyrogenic response by rabbit test. Therefore he suggested that defining a count of 10 organisms per ml., rather than 1,000 per ml., as potentially pyrogenic results in a "safety factor" of about 100 times to account for nonviable pyrogenic sources in the material tested.

"This will be true if the organisms are *added*, but not necessarily so if the organisms *grow* in the solution. This is why the test must be restricted to freshly prepared solutions."

A "freshly prepared solution," as defined by these experimenters, is one prepared with water distilled, used and sterilized within a 24-hour working period.

"Water collected overnight in previously cleansed tanks and then used for washing and solution preparation on the folowing day has been found to be indistinguishable by rabbit test from water collected and used during an eight-hour period," they have pointed out.

The most frequent contaminants of distilled water (Achromobacteriaceae) have a low pyrogenic potential, they found, and prolonged generation time under natural conditions. Freshly distilled

water is not a choice medium for enterobacteriaceae, and there is not enough time for significant numbers of organisms to accumulate in the prepared solution before it is sterilized if the working period is restricted to 24 hours.

"The assumption that all microorganisms are equally pyrogenic is entirely unjustified, does not fit the available data, and is employed on the basis of being a further safety factor in the allowable count: that is, organisms that we have isolated from freshly prepared parenteral solutions, immediately prior to autoclaving, are much lower in pyrogenic potential than is indicated by the assay limits of acceptability."

Stills, receptacles, containers, and delivery lines, Dr. Marcus emphasized, must be of types which are easily and thoroughly cleaned, so that no debris may be trapped anywhere to act as a culture inoculum or medium.

Once a normal range of bacterial counts is established, Dr. Marcus said, a significantly increased count deviation from the mean should indicate the existence of an actual or potential trouble source.

Disadvantages of the procedure are: A bacteriology laboratory or "semblance thereof" must be available; the test is a secondary procedure based on the primary test with rabbits, which itself is fallible (it does not detect pyrogens unless they are present in adequate numbers, and it may yield false positive results, though it is not likely to yield false negatives); unlike the rabbit test, the culture test must be performed as soon as the solution is prepared and is ready for autoclaving, and furthermore, results cannot be determined for 48 hours.

Nevertheless, the authors have concluded that when the culture test is used properly it is as specific and sensitive as the rabbit test.

prescription pad

Ferronord Prograva

Nordson Pharmaceutical Laboratories, Inc. has announced new product Ferronord Prograva, to prevent iron-induced nausea, diarrhea, constipation, and gastric irritation during pregnancy. Capsules contain phosphorus-free vitamins and minerals, ferroglycine sulfate complex, and 0.2 mg. folic acid. Supplied in bottles of 90.

New Acne Agents

Two new acne agents, Fostril and Fostril-HC, used to dry, peel, and degerm skin, have been introduced by Westwood Pharmaceuticals.

Fostril contains polyoxyethylene lauryl ether, six percent; hexachlorophene, one percent; and micropulverized sulphur, two percent in a greaseless base with zinc oxide, talc and bentonite. Fostril-HC contains, in addition, ¼ percent hydrocortisone.

Cosa-Tetrabon

Chas. Pfizer & Co. has produced an oral liquid dosage of glucosamine-potentiated tetracycline hydrochloride. It is used for treatment of diseases caused by susceptible gram-positive and gram-negative bacteria, rickettsiae, large viruses and certain protozoa.

Available in 2 oz. and pint bottles containing 125 mg. of tetracycline per 5 cc. teaspoonful.

For Flu Complications

Syncillin, a new medication containing synthetic penicillin for treatment of upper respiratory infections accompanying cold and influenza, has been announced by Bristol Laboratories. It also contains N-acetyl para amino phenol and naldecon.

Supplied in tablets or a soluble powder.

Sumycin Pressules

E. R. Squibb & Sons has recently released Sumycin Pressules, a tetracycline dosage in plastic pressules. Recommended for many common pediatric infections, the contents

(Continued on next page)

SAVE TIME
SAVE MONEY

DISPOSABLE PLASTIC CATHETERS
by SEAMLESS

Disposable plastic catheters by Seamless are ready for immediate use—factory sterilized and pyrogen free. Individually packaged for longer shelf-life in heat-sealed plastic containers, they will not crack or deteriorate. Catheters by Seamless are economically priced to be disposable for one-time use at minimum cost, or they may be sterilized and re-used for greater savings.

Seamless offers a complete line of plastic tubing as well as catheters in all sizes. Ask your surgical supplies dealer for information on any of the following: *Catheters*—Tieman, Nelaton, Robinson, DeLee Infant Tracheal, Oropharyngeal, Whistle-Tip, Endotracheal anesthesia; *Tubes*—Oxygen, Suction, Levin, Premature Infant Feeding, Urinary Drainage.

HOSPITAL DIVISION
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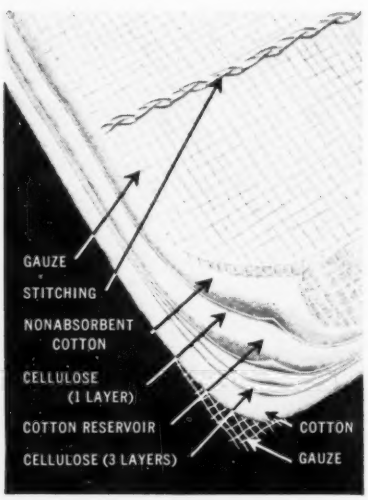
NEW HAVEN 3, CONN.

FUNCTIONALLY DESIGNED FOR POST-OP DRAINAGE



NEW LAMINO® PADS

by SEAMLESS

New Lamino pads afford the ideal balance of cellulose for spreading drainage and high-grade cotton for greatest absorbency. The new *stitched* gauze covering provides a soft surface, yet is remarkably strong even when wet. This unique construction contains drainage, without puddling, more efficiently than with other pads, and simplifies handling after use. For moderate drainage, single Lamino pads, with nonabsorbent cotton to protect bed linens, can be used alone. For heavy drainage, several "all-absorbent" Lamino pads are recommended.

Lamino pads are available in various sizes, or in rolls 8" x 20 yds. when pads of many different lengths are required. See your hospital supplies dealer about sizes and quantity prices.

HOSPITAL DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN.

of the pressule is squeezed directly into the mouth. Each dose provides 100 mg. of tetracycline. Available in packages of 12.

New Dosage Form

Ayerst Laboratories has recently manufactured a 50 mg. Mysoline tablet. It provides one-fifth the potency of the standard 0.25 gm. Mysoline tablet.

It is recommended for initiation therapy where drowsiness is a complication, and transfer therapy where small upward and downward adjustment of dosage may be necessary. Available in bottles of 100 and 500 tablets.

Syrup for Cough Control

New 'Syrup Twistussin' is announced by McNeil Laboratories, Inc. for the treatment of cough, rhinitis and nasal congestion associated with the common cold and other upper respiratory infections such as bronchitis and tracheitis.

Each 5 cc. (one teaspoonful) contains 2 mg. rotoxamine, 5 mg. phenylephrine hydrochloride, 100 mg. glyceryl guaiacolate, 1.67 mg. dihydrocodeinone bitartrate in a fruit-flavored syrup.

Advised dosage (every 4 hrs.) for adults is 1 to 4 tsps.; for children, 1 to 4 yrs., ¼ to 1 tsp., and for children over 4 yrs., 1 tsp.

Available in bottles containing 16 fl. oz.

Diuretic Supplement

A sugar-coated tablet called 'Hydro-Diruil-Ka' containing the diuretic, antihypertensive hydrochlorothiazide ('HydroDiruil') in an outer coating around an enteric-coated core of potassium chloride has been released by Merck Sharp & Dohme, Division of Merck & Co., Inc.

Advised in conditions in which 'HydroDiruil' is indicated and some potassium supplementation desired, recommended dosage is 50 to 100 mg. once or twice daily as a diuretic; 25 to 50 mg. daily as an antihypertensive.

Available in bottles of 100 tablets in two strengths, combining respectively 25 mg. and 50 mg. hydrochlorothiazide with 572 mg. potassium chloride.

Treatment For Glaucoma

For oral administration in the treatment of chronic simple, acute congestive and secondary glaucoma, as well as pre-operative control of intraocular tension in glaucoma, Alcon Laboratories announces Oratrol, a new carbonic anhydrase inhibitor. For smooth control over a prolonged period, it is suggested therapy will be more successful if Oratrol is used in conjunction with miotics.

Each tablet contains 50 mg. of dichlorphenamide. Suggested adult dosage is 100 to 200 mg. initially, to be followed by 100 mg. every 12 hours until desired response is obtained. For maintenance therapy, adult dose of 25 mg. to 50 mg. one to three times daily is suggested.

Available in bottles of 100 tablets.

Digestive Aid Fortifies Diet

By supplementing digestive enzyme secretion, Ayerst Laboratories announce that their enzyme-vitamin-mineral compound, Maturon, will help safeguard against vitamin-mineral deficiencies associated with poor digestion as well as maintain nutritional support.

A comprehensive formula to protect against complaints due to improper digestion of starches, proteins and fats resulting from functional disturbances, certain disease states or the declining enzymatic secretion characteristic of advancing age, recommended dosage is one tablet with each meal.

Available in bottles of 100 and 1,000.

Muscle Relaxant

Somacort, an anti-inflammatory muscle relaxant for relief of acute and chronic arthritis, is being marketed by Wallace Laboratories.

Each tablet contains 350 mg. of carisoprodol (soma) and 2 mg. of prednisolone.

It is also recommended for rheumatic spondylitis, scleroderma, fibrositis, bursitis, tendonitis, and shoulder-arm syndrome.

Dosage is one or two tablets four times daily. Available in bottles of 50.

HOSPITAL Topics

BUYER'S GUIDE

For further information on any of the products, please check the Buyer's Guide number on the reply card opposite page 134.

500. Disposable oxygen mask

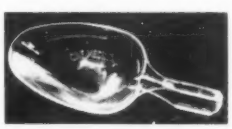
To further supplement the nine models of plastic oxygen masks now available in their line, manufacturer has added disposable mask Model No. 8. Mask follows the "see thru" feature of the others in that the face piece is transparent, increasing patient comfort. Extremely soft and pliable, mask fits wide range of faces, and is cool and comfortable for long-term oxygen therapy. Complete with 5' tubing, in polyethylene bag. Hudson Oxygen Therapy Sales Co., 2801 Hyperion Ave., Los Angeles 27, Calif.

501. Gall duct dilator

Instrument combines in one step the dilating functions of the Baker catheter and the irrigating maneuver of a rubber catheter. Consists of a malleable silver cannula with an olive dilator at one end and a lock attachment on the other end for syringe attachment. In practice, the olive tip is passed through the duct into the duodenum and an irrigating stream is then introduced. Set of three sizes with tips of four, six and eight mm. Over-all length is 10¾". Dittmar & Penn Corp., Philadelphia, Pa.

502. Slides

Manufactured in accordance with optical glass precision standards and electronically checked, new microscope slides have unusual clarity. Distortion free, with no spherical or chromatic aberrations; highly resistant to corrosion and discoloration. Packaged in single-slide-out box with slanted tray-type cover; completely sealed in cellophane. Mercer Glass Works, Inc., 725 Broadway, New York 3, N.Y.

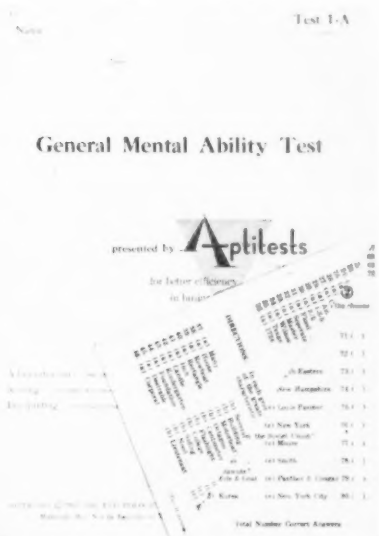


503. Spoon

New disposable teaspoon of clear plastic for medical use has 3.77 capacity with ½ teaspoon scoring. Designed for one-time use, spoon eliminates washing and sterilization, preventing cross infection. Busse Plastics Co., 64 E. 8th St., New York 3, N. Y.

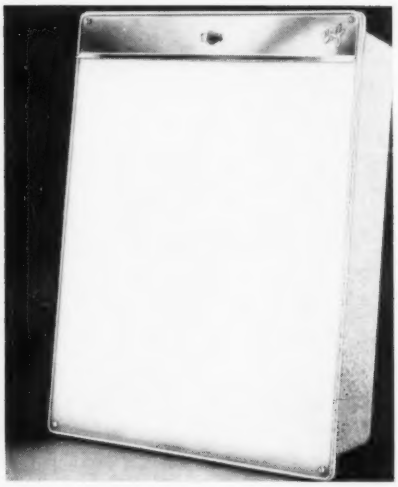
504. Transparent tubing

Supramid Extra tubing, which can be repeatedly autoclaved, is fully inert, and the flexibility can be controlled by the method of autoclaving. Made of the same material as the Supramid Extra suture, it is initially economical, and can be re-used. Wound on plastic reels, packed in polyethylene bags; 12 reels per box. Dr. S. Jackson, 4713 Colorado Ave., N. W., Washington, D.C.



505. Mental ability test

New test is designed to give personnel administrators a quick, economical and scientifically reliable indication of mental ability, as an aid in hiring, placing and promoting. Part of a complete series of eight Aptitests which measures intelligence, personality traits and specific job aptitudes and abilities, test is a relatively short-time test. Intended for easy administration, rapid scoring and quick, accurate interpretation by persons without previous experience. Aptitests, 31 S. Carpenter Ave., Indiana, Pa.



506. X-ray illuminator

New Feather-Lite features a Fiberglas construction. Entire unit, including hardware, is non-corrosive. May be stood on desk top or wall-mounted with clips provided for the purpose. The 14"x17" Plexiglas U.L. approved viewing area has built-in aluminum reflector designed to provide uniform diffusion of light. Incorporates Magic-Grip film retainer which holds film by tension, without springs, clips, other devices. Finished in ivory and furnished with a G.E. circline lamp, toggle switch, and 6′ cord with plug. Over-all size: 14" wide, 5" deep, 18" high. Wolf X-Ray Products, Inc., 93 Underhill, Brooklyn 33, N. Y.

507. Plastic pitcher

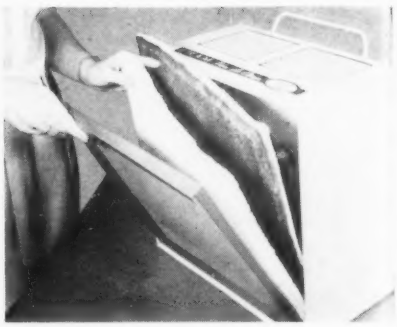
Of high impact plastic, suitable for serving either hot or cold liquid, pitcher has a capacity of 44 ounces. Jet black to match Ebony Diamond line of salad and serving bowls. Rugged construction makes it ideal for institutions; washable in mechanical dishwasher, resistant to mild acids and alkalis and stains. Silite, Inc., 2660 N. Pulaski Road, Chicago, Ill.

508. Germicide

New Bleach-Eez, a 100 percent water soluble germicide in tablet form contains trichloro isocyanuric acid (90% available chlorine). One tablet dissolved in eight gallons of water makes a 100 part per million chlorine solution, guaranteeing correct, sanitizing concentration. Tablets eliminate waste, personal injury and clothing damage. In 100, 250, 500 and 1000 unit containers. Alden Leeds, Inc., 390 Butler St., Brooklyn, N. Y.

509. Cleanser

Aerosol vaginal cleanser, Vaga-Spray, has been introduced as a replacement for the vaginal douche. Can be used as a cleanser, preoperatively and postoperatively, as preparation for certain medical procedures, and as a spermicide in conjunction with the diaphragm technic. Two surface-acting ingredients, with bactericidal, bacteriostatic, detergent, lubricant and spermicidal properties are combined in formulation. Menlo Park Laboratories, Inc., c/o Fords Post Office, Edison, N. J.



510. Room air cleaner

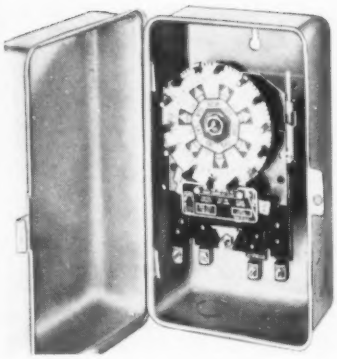
Expansion of manufacturer's germicidal room air cleaner line adds two new machines, plus odor-removing filters on all three appliances. Original unit, a 25-lb. portable, recirculates air at 200 cubic feet per minute. New are a smaller unit, and a larger unit for institutional use. The small unit operates at 125 cubic feet per minute, and will change the air in a 1,000 cubic foot room every 12 minutes; the large unit moves 350 cubic feet of air per minute. All are equipped with a triple sandwich of filters which remove odors, germs, dust, pollen and other irritants. Dry filter media has superior dirt retentive qualities because of its depth-maze construction; odor-removal is accomplished with a separate filter. Fram Aire Corp., Providence 16, R. I.

511. Ultrasonic cleaner

New dual-purpose ultrasonic cleaner console features self-tuning feedback to assure maximum cleaning efficiency without need for constant surveillance and retuning. The two tanks can also serve as ordinary sink wells when ultrasonic activity is not required. The all stainless steel unit has standard control and spray fixtures and a simple on-off switch which turns on ultrasonic activity and maintains peak performance without additional tuning. Space-saving unit offers cleaning of surgical instruments, laboratory equipment, syringes, pipettes, and virtually all types of equipment. Removes wide variety of contaminants. Over-all dimensions: 36" wide, 28" deep, 32" high. Powerton Ultrasonic Corp., Patterson Place, Garden City, N. Y.

512. Thermometer package

All five lines of company's thermometers will be supplied in redesigned, sleeve-type boxes. The Red-Flash, shown, illustrates the new, more convenient soft, plastic case which replaces the old fountain pen types. Becton-Dickinson and Company, Rutherford, N. J.



513. Time switch

New 55-Amp. seven-day time switch is equipped to handle heaviest lighting loads, and automatic control on schedule takes over in event of power failure. Individual on-off lighting schedules for each day of the week can be set on the seven-day dial. When weekend or selected day omission is desired, this is part of the master program schedules on the one dial. Lights are turned on and off each day at times required. Lug terminals, taking up to #6 wire without bending, make for quick, solderless connections. May be ordered without case, but with bracket, or in flush enclosure for panelboard or recessed wall mounting. Tork Time Controls, Inc., Mount Vernon, N. Y.

514. Self-dispensing cup

New type of plastic container, the Show-Cup, converts from a container to a ready-to-use serving dish simply by pressure-fitting the lid at the base of the container. Ideal for individual servings on patient trays and in hospital and institution cafeterias. Economical, the cups and lids nest together to save space and handling. The cups, which have a four-ounce capacity, are available in a wide variety of transparent and colored plastics, including such combinations as transparent bottom and colored top, and colored top and bottom. Gilbert Plastics, 10 Boright Ave., Kenilworth, N. J.

515. Nurses' shoes

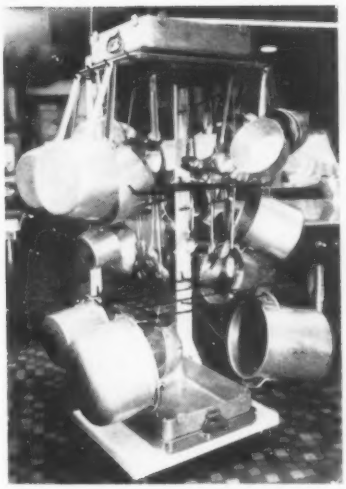
New shoe line for nurses and other hospital personnel, has six in-stock styles including wedges, pumps, and a ripple sole. "Technicians" feature a long inside counter, super shanks, moulded leather arch, cushion bottom filler, anchor eyelet, plus the exclusive Venti-Mesh – voted the most popular feature in a survey among professional women. P. W. Minor & Son, Inc., Batavia, N. Y.

516. New anesthetic

Potent new local anesthetic, Carbocaine, numbers among advantages its wide usefulness, high potency, safety and suitability for use without epinephrine. Rapid onset of anesthesia after injection results in satisfactory deep desensitization and long duration. Can be used for many types of local anesthesia, ranging from infiltrations to regional block, and including caudal and peridural technics. May be used with epinephrine, but will give highly satisfactory performance without it. Winthrop Laboratories, 1450 Broadway, New York, N. Y.

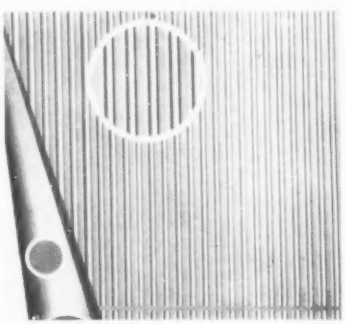
517. Window cleaner

Window-San window cleaner is now available in new 15-ounce aerosol spray container. A foaming agent has also been added to improve cleaning efficiency, help speed washing and polishing. Can be used on all glass, enameled and Formica surfaces. Also in liquid form for use in spray-top bottles. Sample can on request. Huntington Laboratories, Huntington, Ind.



518. Pantree rack

New type of mobile rack is designed to carry pots, pans, strainers, colanders, stockpots, utensils and kitchen tools on hangers, and roasters, bake sheets, dish boxes and trays on shelves. Hanging equipment rather than stacking it under counters and tables keeps working areas uncluttered, and assures perfect air drying. Unit is 64″ high, with a 22″x28″ base. Shelves are adjustable on 6″ casters, and are made of heavy plastic-coated wire. Base and frame of heavy-gauge steel, rustproofed with new epoxy paint which is chip proof, acid proof, and scratch resistant; all-swivel 4″ casters. Pan Tree Rack Co., P.O. Box 4575, Cleveland 24, O.



519. Vinyl carpet

Designed for indoor and outdoor use, new carpet comes in eight sunfast colors, is luxurious in feel; weatherproof, mildewproof, markproof, fire- and slip-resistant. Said to be impervious to dampness, mold, vermin, moths. Can be washed with soap and water, detergent, rug shampoo, or vacuumed. Can be installed on, above or below grade, directly on most types of flooring. In 54″ widths. U. S. Rubber Co., Mishawaka, Ind.

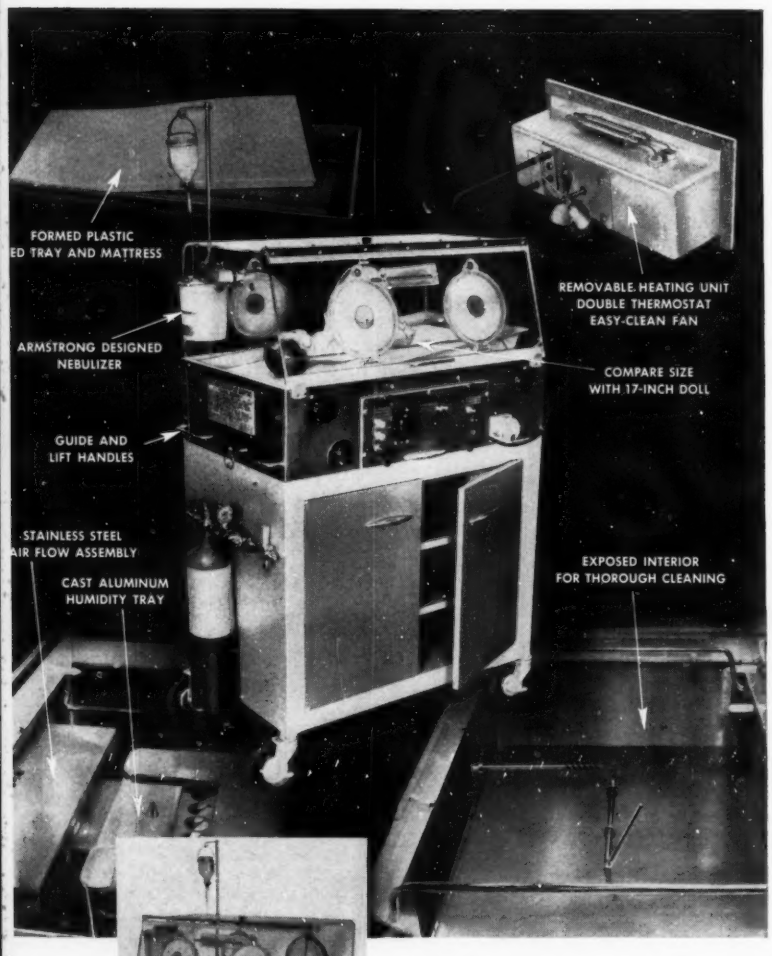
For further information see postcard opposite page 134.

Announcing the NEW

ARMSTRONG UNIVERSAL BABY INCUBATOR

MODEL 188

BACK of the Armstrong UNIVERSAL Baby Incubator is the experience of 17 years in the production of 30,000 baby incubators. This New Armstrong UNIVERSAL Baby Incubator also incorporates many of the ideas and suggestions made by doctors, nurses, and hospital administrators to provide the finest incubator for meeting all requirements in incubator care of newborn infants. Study the brief details here and then write or wire for complete information and special introductory price.



The larger photograph above shows the front and left side. Oxygen cylinder carrier, etched instruction plate and nebulizer are on left side.

The smaller photograph below shows front and right side. Air filter and oxygen inlet controls are placed on the right side.

Features You'll Appreciate

ISOLATION—Many built-in features permit operation without opening the lid or portholes. The ultimate in isolation is provided.

FOUR HAND-HOLE OPENINGS—Two hand-holes in the front and two in the rear have soft, plastic shields which adjust automatically to wrists or arms. Clear plexiglass doors cover the hand-hole openings.

FRONT LID OPENING—When open, the front lid lays flat on top of hood and permits normal handling of baby without complete loss of heat, humidity or oxygen.

SAFE, AUTOMATIC HEAT CONTROL—When the heat control dial is set as desired, a forced air circulation unit assures automatic temperature control to plus or minus one degree. For maximum safety, each heating unit is equipped with two thermostats. The sealed heating unit is guaranteed service-free for three years if not abused.

AIR-FILTER—The forced air circulating unit draws air through a large sub-micronic filter to provide maximum isolation. Filter is extra-large to reduce frequency of replacements.

CLEAR-VIEW THERMOMETER—A special shield affords clear view of armored F. & C. thermometer, even if condensate forms.

HUMIDITY CONTROL—Humidity control dial operates a damper for low to high humidity.

TILTING BED—The large tilting bed of heavy-duty plastic with smooth finish is easily cleaned. The air foam mattress is never too hot nor too cold, but heated to incubator temperature. Two knobs on front tilt bed to Trendelenburg or Fowler position without opening incubator.

EASY CLEANING—The incubator can be kept spotlessly clean with minimum effort. Heating unit, humidity reservoir, and air flow assembly can be quickly removed without tools to expose the entire stainless steel interior.

A COMPLETE UNIT—With the exception of a weighing scale (available as extra equipment), the Armstrong UNIVERSAL Baby Incubator is a *complete* unit that incorporates everything required in a baby incubator. Other equipment not described here includes nebulizer, oxygen cylinder carrier, ice chamber, I.V. stand, and large roomy cabinet fitted with shelves and doors.

THE GORDON ARMSTRONG CO., INC. 1501 EUCLID AVENU
CLEVELAND 15, OHI

Available in Canada from Ingram & Bell, Ltd., Toronto — Montreal — Winnipeg — Calgary — Vancouver

520. Aluminum "Dogtag"

One-inch aluminum tag is embossed with a large letter "D". Inside, against a brilliant red background, is a white cross. Designed to identify wearer as a diabetic, emblem may be worn around the neck or as a bracelet. Reverse surface states "If unconscious, put sugar or candy in mouth. Please send me to a hospital at once." Since most police officers are prohibited from examining immediately the contents of wallet or purse, life-saving minutes may be lost in treating a diabetic. A child in shock, of course, rarely carries purse or billford. Anodized aluminum tag is non-toxic; not affected by water, soap, detergent, or perspiration; will not bend, break or scratch; will not fade or become discolored; will not mark skin or clothing; lightweight. Room 750, Alcoa Bldg., Pittsburgh 19, Pa.

521. Autoclavable Film

New nylon film for packaging, autoclaving and sterile storage of linen and instruments is available. It is steam permeable, yet impermeable to bacteria. May be autoclaved using normal technics and with temperatures as high as 287°F. Tests prove it 100% effective in keeping contents bacteria-free even after two-and-one-half years of storage. Tough, abrasion resistant and flexible, smooth surface affords ease of handling. Transparent, extremely durable, it can be autoclaved repeatedly and is re-usable. In 12 widths from 1" to 20" and in two thicknesses. Available in lengths of 100' and 1,000', may be cut to desired length for use. Sierra Engineering Co., R. A. Hawks Division, 123 E. Montecito, Sierra Madre, Calif.

522. Magiclean

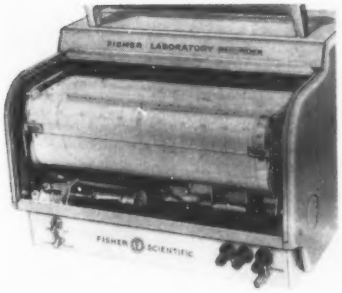
New product combines into one operation, the previous three-step process of cleaning with a detergent, disinfecting with a rinse, and deodorizing with a spray, with consequent cut in labor costs. Has high phenol coefficients against gram positive and gram negative bacteria, including staphylococcus aureus. Effective on floors, walls, bathrooms and restroom fixtures, locker rooms, kitchen equipment, animal laboratories. Lester Laboratories, Inc., P.O. Box 4897, Atlanta 2, Ga.

523. Surgical glove

New protection against staph germs and other bacteria is claimed for improved surgical glove which has a dipped-on size-identification band which leaves no niches where germs can gather. The colored bands, unlike previous cemented-on bands, are an integral part of the glove and cannot come off, even under extreme autoclave heat; cannot come off or tear loose during surgery. Standardized color-coding instantly spots right glove size in sorting operations. B. F. Goodrich Co., Akron, O.

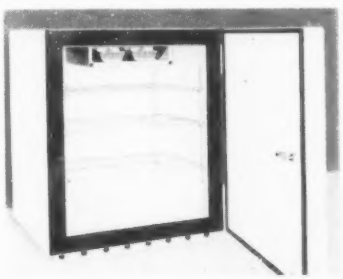
524. Towel dispenser

New anodized aluminum towel dispenser cabinet eliminates rust and wearing away of paint and retains sleek appearance with minimum of maintenance. Directions for use permanently embossed on the front. Leased free to users of Mosinee Turn-Towels only. Bay West Paper Co., 1100 W. Mason St., Green Bay, Wis.



525. Laboratory recorder

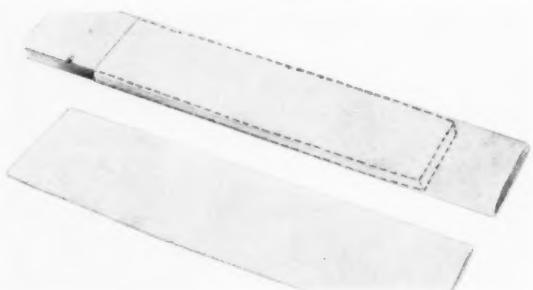
New recorder has the sensitivity, speed, stability and convenience to make it a partner for recent chromatographic instruments, for tracing complex gas chromatograms. Will record temperature, monitor photocell output — any instrument reading that can be converted into d-c millivolts in the lab recorder's range. Recorder is 15" x 13" x 9", weighs 28 lbs., has carrying handle. Chart paper is behind sliding door of transparent plastic. Chart lies flat so notations can be added as paper unrolls. Pen takes less than 0.6 second to travel 9.5" width of the paper; lever gives instant choice of five speeds: 0.5, 1, 2, 4, or 8" per minute; electrical zero can be set anywhere on the chart by turning the knob. Circuits are designed to eject most d-c or 60-cycle a-c interference, and can handle potentials that are 300 volts above ground. Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.



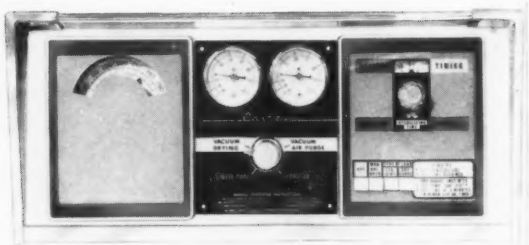
526. Freezing-cooling units

Small-scale twin freezer and refrigerator, with 5.17 cu. ft. of unobstructed capacity, may be stacked, placed under a counter or laid side-by-side at reach-in height. Designed for use separately or together, each measures 34" high, 27" wide, and 27½" deep. The freezer, which operates on the "cold wall" principal, has a 1/5 hp. compressor and four storage areas. The refrigerator features a two-tray ice cube maker-evaporator, with a ⅛ hp. compressor. Both have fully adjustable controls and wire-plated shelves. Nor-Lake, Inc., Hudson, Wis.

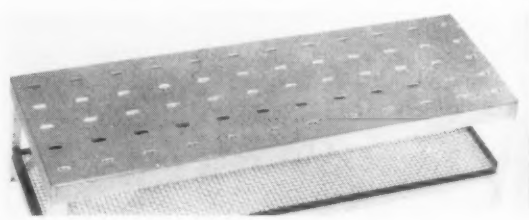
527. Plastic splint
Inexpensive plastic splint and finger protector material, Protecto Splint, is comfortable and easily adjustable to the contour of the finger, but rigid enough to hold fragments as reduced. Material is washable and radio translucent. The 20′ roll fits an aluminum dispenser which fastens to desk or wall. Zimmer Manufacturing Co., Warsaw, Ind.



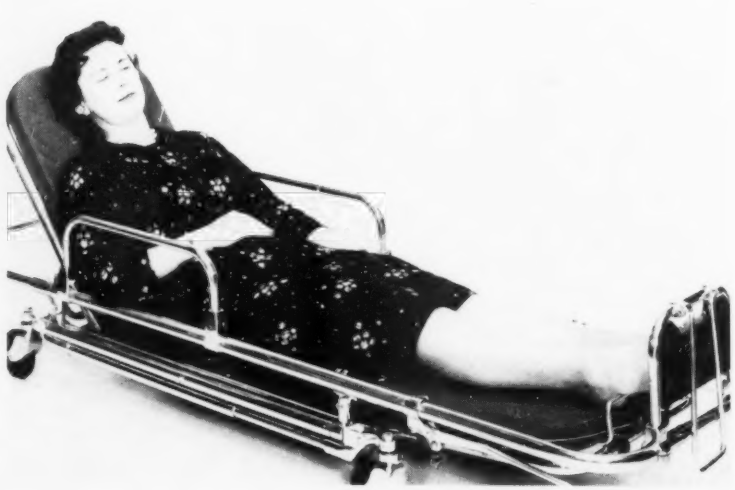
528. IV arm board
New IV arm board system saves time by eliminating the tedious wrapping before each use; is cheaper than traditional method and helps eliminate the possibility of cross-infection. A special rigid support is combined with plastic foam; this unit is encased and electrically sealed in heavy-gauge vinyl. Resulting tough, springy board needs no wrapping; it slips into disposable sleeve of Dura-Weve, ready for use. System is safe, economical, effective; sleeve prevents skin irritation. Ipco Hospital Supply Corp.,



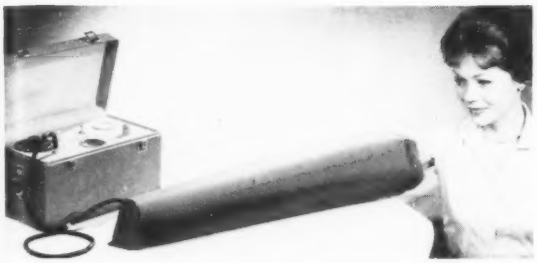
529. Sterilizer control system
New "high vacuum" system capable of quadrupling speed of conventional dry goods sterilization while increasing reliability of results employs an automatic high-vacuum pump to evacuate air rapidly from the sterilizing chamber and load, thus radically reducing load heat-up and over-all cycle time. Time-temperature integrator automatically determines exposure-time based on sterilizing temperature attained. Typical cycle requires approximately 15 minutes cycle time, compared to the 60-90 minutes needed with conventional equipment. Typical cycle is: five minutes initial vacuum; two minutes heat-up; three minutes sterilization; three minutes (maximum) post-vacuum; two minutes return to atmospheric pressure. Equipment optional for use with new sterilizing equipment or for conversion of existing units. Wilmot Castle Co., Rochester, N.Y.



530. Toothbrush holder
New toothbrush holder, of stainless steel, is designed especially for use in public institutions, such as mental hospitals, where toothbrushes cannot be retained by the patients. Handles fit into slots on top of the unit; wire mesh at bottom permits drying, free ventilation. Available in several sizes. Pratt Hospital Equipment Mfg. Co., 3007 Southwest Drive, Los Angeles 43, Calif.

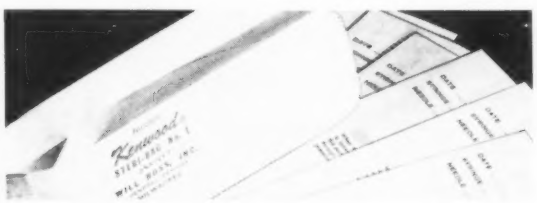


531. Stretcher-cot
New concept in ambulance cots is designed to provide greatest possible amount of headroom, being the first which can be used in a car with less than 35″ headroom. Fingertip control permits four height adjustments: 31½″, 26″, 18½″ and 9½″. At lowest level, recessed bed is only two inches from the floor. Features an easy operating backrest which is combined with the recessing bed. Side rails swing down so bed lays out flat, permitting easy patient transfer by one man. Constructed of Alcoa tubular aluminum, it weighs 44 lbs. Footrest, folding foot pull handle, folding side arms. Fits all standard cot fasteners. Another innovation is new reflecting fabric backing footrest. Overall length, 72″, width, 22″. Ferno Mfg. Co., Greenfield, O.



532. Edema treatment device

Treatment of edema and peripheral vascular conditions consists of removing edematous fluid from an arm or leg by gentle, intermittent, controlled massage. Compact compression unit imparts prescribed pressure to a pneumatic appliance that encircles the affected extremity. After swelling has been reduced, exclusive custom-measured fabric pressure gradient supports prescribed by the physician are worn to maintain benefits of the reduction. Available in portable and large hospital units. R. D. Grant Co., 761 Hippodrome Bldg., Cleveland 15, O.

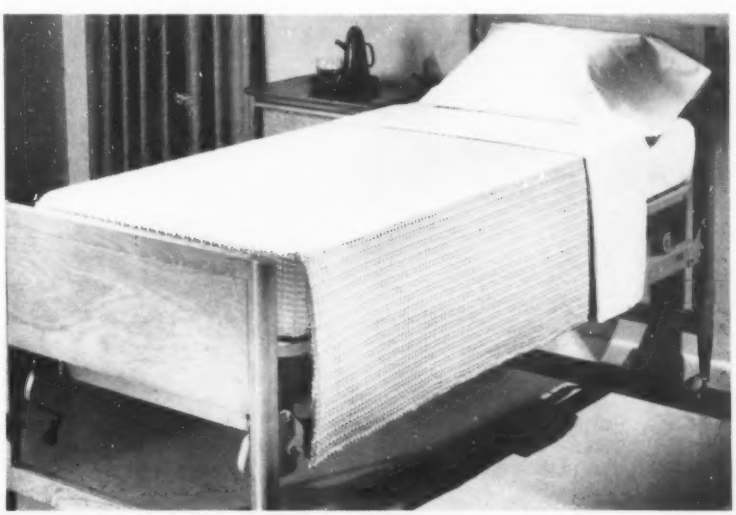


533. Steri-Bags

Complete new line of paper bags designed for packaging syringes, needles, scissors, instruments, catheters, gloves and other items in central supply. Made of strong, 40-lb. white paper that is permeable to steam and protects sterility until package is opened. Special indicator marking on each bag changes from pink to dark brown when package has been autoclaved. Space is provided for writing in date, contents and size. Three most-used sizes have self-stick sealing that eliminates need for tape or staples. Needle bags are color-coded for gauge. Will Ross Inc., 4285 N. Port Washington Rd., Milwaukee, Wis.

534. Bedspread

New bedspread, the Citadel, has been designed and colored to specifically fit into hospital and institutional installations. Designed for long-wearing serviceability, it is fashioned with a yarn-dyed durable ground fabric woven of highest quality cotton yarns, and is topped with an over-all, geometric type white motif. Finished with square edges to retain neat, trim appearance the spread comes in pink, blue, yellow, aqua, sand, willow green and light grey, as well as all-white. Fully tested, the Citadel bedspread is preshrunk, will shed wrinkles, is machine washable, and may be tumble-dried. In two sizes: 72″ x 99″ and 72″ x 101″. Swatch card available. Contract Division, Morgan-Jones, Inc., 404 Fifth Ave., New York 18, N.Y.



535. Utility truck

New utility truck, with interchangeable accessories, is constructed of corrosion resistant heavy-duty aluminum for long life and low maintenance. A ⅛″ thick aluminum base easily carries heavy load; truck bed features welded corners and is mounted on caster brackets of 3/16″ thick aluminum sheet. Rubber-tired casters, two swivel, two stationary, are 8″ in diameter, with each wheel having a weight load of 250 lbs. A 1″ handle fits into place at either end, and is fitted for lock bolts. Side and end panels are available which slide into place to form a panel truck. Wear-Ever Aluminum Co., Inc., Wear-Ever Bldg., New Kensington, Pa.

536. X-ray film developer

New high-speed developer, MED, cuts between 20% and 30% from exposure time required by most conventional developers. At the same time, according to the manufacturer, its radiographic quality is as high or higher than that of slower counterparts, and costs no more. Even when compared to other high-speed chemicals, patient exposure is reduced by 12%; used in conjunction with selected screens and films, reduction can exceed 50%. New developer is designed for either manual processing or use with the automatic processors. Can be used for rapid processing, at temperatures as high as 85°F with no detrimental fog Self-replenishing, both developer and fixer need not be stocked. In calibrated polyethylene bottles. General Electric Co., 4855 W. Electric Ave., Milwaukee, Wis.

For further information see postcard opposite page 134.

Roy Joyer (l.) of Ipco Hospital Supply Co., New York, N. Y., and Bob Wood (r.), of Surgical Selling, Atlanta, Ga., are attentive audience for Denny Dussey, representing the John Bunn Corp., who explains uses of company's Alternating Pressure Pad. Pad's plastic tubes inflate alternately, relieving pressure on patient's body and increasing comfort. C-550.

Propper Mfg. Co., Inc. displayed the new Hi-Speed Timecard Indicator, developed for use in autoclaves requiring temperatures of 270° F. and a speed of 5 to 7 minutes. Representatives Al Numan (l.) and Bill Leidholdt (r.) talk timecards to Robert Leon, Columbus Hospital Supply, Columbus, Ohio. C-551.

American Surgical Trade Association — Technical Exhibits

Left: Irving Walton (l.), of Hub Surgical Co., Williamsport, Pa., gets full information on the EK-111 Console from Frank Langer, of Burdick Corp. The new electrocardiograph features 25 and 50-mm. speeds, simplified paper loading, easy mobility, finer definition with tubular stylus. C-552.

Below: Carstens' new pneumatic osteotome is demonstrated by Herbert Carstens, of H. Carstens Mfg. Co. for Charles Green (l.), Crowley & Gardner Co., Boston, and C. L. Golightly, Williams Physicians and Surgeons Supply, Shreveport, La. Explosion-proof instrument delivers impact on front stroke only, resulting in quieter, vibration-free use. C-553.

Russell Ladd (l.), of McKesson Appliance Co., and Melvin Waltz, Wayne Pharmacal Supply, Fort Wayne, Ind., discuss uses of McKesson's latest model oxygen tent and equipment. Company also showed emergency oxygen equipment and Vitalor apparatus for evaluating pulmonary ventilatory function. C-554.

Don Kammer, Clarence Maxson, and C. G. Sanderson, representing Ritter Company, Inc., demonstrate the flexibility of Ritter's newest operating table to Phil McNeill, of Kentucky Surgical Supply, Inc., Memphis, with the aid of a movable plastic two-dimensional model of the table. C-555.

John H. Crawford (l.), representing J. Sklar Mfg. Co., demonstrates workings of the Gravlee Gun, umbilical cord tier, to Anthony Zeleznik, of Schuemann-Jones, Cleveland, Ohio. The instrument securely ligates the umbilical cord, without contamination from operator's hands, and provides immediate, permanent hemostasis. C-556.

The Ranfac Sharpet sterile hypodermic needle, manufactured by Randall Faichney Corp., prompts serious talk between Max Miller, of Munns Medical Supply Co., Inc., Topeka, Kan., and Ed Thornburg, of Randall Faichney. Disposable needle is of stainless steel; drag-free point insures smooth penetration. Cartridge is tamper-proof and color coded for size. C-557.

Emil Kostka (l.), of Medico-Mart, Inc., Milwaukee, Wis., examines the Reliance motor hydraulic chair at F. & F. Koenigkramer Co. exhibit. Milton Beamer and William B. Webster, representing the firm, stand ready to answer questions. Chair has single pedal control. C-558.

Atlantic Alloy Industries, Inc. displayed the all-aluminum Linenmobile for hospital clean linen distribution, with a new staph control feature. Lawrence T. Donovan (l.), of E. F. Mahady Co., Cambridge, Mass., inspects the cart while John J. Egan, Atlantic, explains. C-559.

Above left: Mr. and Mrs. John Stander, Curtis & French, Inc., Indianapolis, pause at the Minnesota Mining and Mfg. Co. exhibit to investigate the new "Scotch" brand surgical mask, held by MMM representative R. W. O'Kieffe. New mask has comfort features of a gauze mask, and maintains a high bacteria filtration efficiency. C-560.

Above center: Two of the Texal Company's elastic binder splints are held by Tex Messer (l.), representing Texal, and A. W. Kausler, Cursack Harmon Co., Sioux City, Iowa. Binders are available with Velcro and conventional buckle closings. C-561.

Above right: Alconox, Inc. has begun marketing a new line of items in spray can packaging. Edward P. Fenlon (l.), of Alconox, discusses Skin Freeze, a topical anesthesia, with Jim Kempthorne, Daniels Surgical Supply, Chicago. Other items include tape remover, tincture benzoin, and a spray bandage. C-562.

Above left: Hartman-Leddon Co. representative Frank J. Naulty discusses the Harleco LDH Kit with William M. Brooks, Brooks-Burke Surgical Supply Co., Atlanta. Test kit contains reagents for determining levels of lactic dehydrogenase in tissues. C-563.

Above center: C. E. Barnes, Southern Surgical Supply, Memphis, Tenn., and Jay Jamner, Lawton Co., Inc., inspect the Lawton Peers towel clamp. The new clamp is now being tested and will soon be available for hospital use. C-564.

Curity non-absorbable sutures are the subject of conversation between Joe Adams, Mills Hospital Supply Co., Chicago, and Jack Kelley, representing Bauer and Black. Sutures are moist-packed in dry foil packets and are available in silk and cotton. C-565.

Below: Goodrich Rubber Co.'s line of banded gloves were displayed. The glove and band are made in one, eliminating possible collecting of bacteria in creases. Gloves are reversible. Ernest Poyo (l.), of Surgical Selling, Atlanta, and Thomas H. Randall (r.), of Surgical Selling, New Orleans, watch demonstration by B. E. Elzey. C-566.

Hermien Nusbaum and Associates featured new plastic items, among them a urinal of high density polyethylene. Nelson Willard, South Jersey Surgical Supply, Red Bank, N. J., listens as Hermien Nusbaum explains features. Plastic urinal can be boiled, is unbreakable and noiseless in handling, and is odorless. C-567.

Above: The AO Hb-Meter is demonstrated by Ed Finnegan, of American Optical Co. to J. Beatty Williams, Philip D. Diuguid, and Winston Caldwell, of Southern Surgical Supply Co., Jacksonville, Fla. The Hb-Meter gives a laboratory-accurate hemoglobin determination in three minutes. C-568.

Upper right: Johnson & Johnson's new absorbable hemostatic agent, Surgicel, caught interest of Robert Peretti (c.), Deckert Surgical Co., Santa Ana, Calif. J&J's Patrick J. Heraty (l.), and H. C. McNamer, Jr. offer assistance. Oxidized regenerated cellulose material is recommended for many areas of surgery, including heart and major artery. C-569.

Right: Z. M. Roehr (l.), of Roehr Products Co., Inc., graphically demonstrates hardy qualities of Monoject disposable syringe for John McGuire and Matt Miller of Colonial Hospital Supply Co., Chicago. Syringe is marketed in sealed plastic container and may be used in a sterile area. C-570.

Right: Foster Monaco, of Curvlite Surgical Products, demonstrates the portability of the Oxy-Lyfe emergency oxygen unit for Milton S. Kimball, of George C. Frye Co., Portland, Maine. The unit is available in sizes from 60 to 300 liter capacity, each in a carrying case, with valves and regulator. C-571.

Below far right: Norman J. Filips, of Wayne Pharmacal Supply, South Bend, Ind., watches as Henry Hartmann, of Inland Bed Co., demonstrates the Inland two-section hospital bed designed for home rental. The bed comes apart for easier transporting; bolts securely together in minutes. C-572.

Below center: George Crosby, of Crosby Surgical Co., Inc., Omaha, and Gilbert Frommelt, of Orthopedic Equipment Co., examine OEC's Schede Walking Tricycle, recommended for children with congenital hip dislocations and certain post-operative conditions. Tricycle has adjustable seat, 90° to 140° abduction for each leg. C-573.

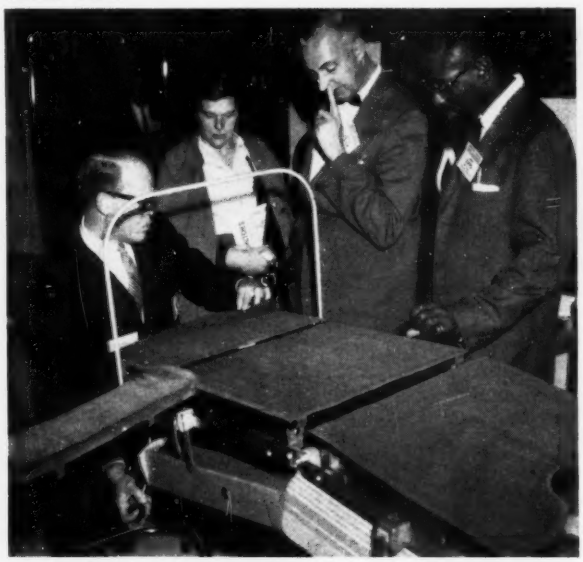
The Castle operating table's controls are exercised by John Matthay, Jr., while John Matthay, Sr. looks over his shoulder. Both represented the Matthay Hospital Supply Co., Los Angeles. William Frey of Wilmot Castle stands ready to offer assistance. The Model T5000 table has fingertip control, five-section table-top. C-574.

J. M. Coates (l.), of Medical Fabrics Co., Inc., demonstrates the qualities of the firm's new Flex-O-Cel elastic pressure bandage to Donald Handy, of Crowley & Gardner, Boston. Polyurethane foam bandage will not slip or bind, can be autoclaved. C-575.

Use of Austenal Company's Holt nail for femur fixation is explained by George Novotny (r.) representing the firm, to Harold Weatherford of Mills Hospital Supply, Chicago. Holt nail is one of line of Vitallium appliances and prosthesis shown by Austenal. C-576.

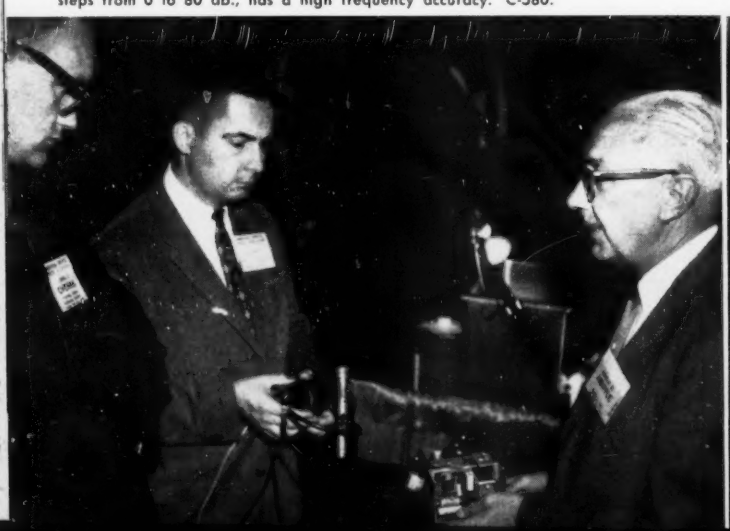
Schuco Industries, a division of Schueler & Co., introduced new additions to its line of Medi-Sprays, among them a spray disinfectant for hospital furniture. Fred M. Joslyn (l.), of Schueler, discusses line with John B. Garrett, Jr., of John B. Garrett, Inc., Troy, N.Y. C-577.

Below: Shampaine Co.'s S-1500 Surg-A-Power major operating table, with power positioning and power-off emergency controls is demonstrated by Charles Colin (l.), of Shampaine, for Mrs. Ralph Flick and Mr. Flick, Flick Bros., Pittsburgh, and Larry Epps, Randolph Surgical Supply Co., Detroit. C-578.



Below: Patient-Aire cast ventilator was shown by Conco Surgical Products, Inc. Vincent Devine (l.) and John W. Skinner (r.), representing Conco, explain features to Palmer Bedsole, Mobile Surgical Supply Co., Mobile, Ala. Motor forces air through vinyl tubing into .30-inch thick porous layer, warms or cools patient, reduces itching. C-579.

The Ambco Model 600 Otometer is discussed by (l. to r.) John D. Chehak and John Awbrey, Medical Arts Surgical Supply, Cedar Rapids, Iowa, and Harold B. Whipple of Ambco. The portable instrument, a screening audiometer, is calibrated in 5 db steps from 0 to 80 db., has a high frequency accuracy. C-580.



The Puritan Nebulizer is the center of attraction between Lee H. Rammel (l.), Massey Surgical, Inc., Kingsport, Tenn., and Bob Packard, representing Puritan Compressed Gas Corp. Nebulizer features new heating apparatus. C-581.

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Plastic Tubes
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Above left: J. D. Hanafin, W. A. Baum Co., Inc., demonstrates new Velcro-fastened Air-Lok blood pressure cuff for Wallace Waldman, South Jersey Surgical Supply Co., Red Bank, N. J. The Velcro fastening assures perfect fit on any arm; cuff will not slip or balloon. C-582.
Above center: Plasmanate, Cutter Laboratories' new transfusion liquid, is the subject of interest for (l.) Art Walz, Cutter, and Les Roberts, Medical Supply Co., Miami, Fla. New fluid is heat treated against hepatitis, is stable, free-flowing, and will not clump or precipitate. It can be refrigerator-stored for long periods. C-583.
Above right: Joseph Frasier, of the Beck-Lee Corp., points out literature on the Cardi-O-Mite portable electro-cardiograph to John D. Lagan, Philadelphia Surgical Instrument Co. Available in single and two-speed models, the Cardi-O-Mite is direct-writing and has a built-in audible heart signal monitor. C-584.

Above: Lee W. Thomson III, (l.) of Invalex Co., Inc. discusses the Model 520 children's training walker with Frank Macaluso and Max Grossman, of Crowley and Gardner Co., Boston. The tubular steel walker, useful in birth defect and cerebral palsy cases, has anti-swivel casters. C-585.

Above right: Practical demonstration of light and image transmission by Fiber Optics is given by R. V. Lange, of American Cystoscope Makers, Inc., for (l. to r.) Mortimer Kadlishin, Allied Surgical Supply Co., Lancaster, Pa.; C. F. Cathro, California Surgical Supply Co. Ltd., Los Angeles; and Bob Lyons, Spokane Surgical Supply Co., Spokane. C-586.

Below left: Stucca plaster of Paris bandage, manufactured by Acme Cotton Products Co., Inc., prompts serious conversation between Acme's Paul Schiller (l.) and Winston L. Trerice, Ferndale Surgical, Inc., Ferndale, Mich. Bandage sets into lightweight, strong cast. C-587.
Below center: Tom Creagh (l.), of Walton Laboratories, Inc., explains features of new Thera-Mist Cold Steam Humidifier to Roger Breda, of Schuemann-Jones, Cleveland, Ohio. The vaporizer-humidifier evaporates up to 2½ gallons per day. C-588.
Below right: Homer Higgs (l.) and H. Richard Wright, of Homer Higgs Associates, Inc., join in explaining advantages of Sani-Pac incontinent pants to Richard Ridella, Schuemann-Jones, Cleveland. Pants have proportionate tailoring, are sanitized, pre-shrunk. C-589.

Hospital Topics Book Corner

HEART DISEASE, BLOOD PRESSURE, AND STROKES, *by C. Anthony D'Alonzo, M.D., F.A.C.P. Houston, Texas, Gulf Publishing Company, 1960. $3.50. 159 pp.*

In view of the fact that the American public has become increasingly heart conscious, this book is a timely one. Aimed at the layman, the text is as non-technical as such a complex subject can be.

The author is assistant medical director, E. I. duPont de Nemours and Company, and is familiar with heart disease as it appears in industry. He explores the causes, treatment and particularly the prevention of these diseases, and stresses the far-reaching effect the conditions have on industry.

Illustrations and tables in the book demonstrate normal and abnormal electrocardiograph readings, appearance of the heart following a coronary thrombosis attack, and comprehensive diagrams of the heart tree and arteries.

YOUR GOVERNMENT GUIDEBOOK, *by Robley D. Stevens. Boston, W. A. Wilde Company, 1959. $4.50. 168 pp.*

An excellent guidebook, this volume offers some fundamental information on official Washington; its bureaus, functions, and divisions. In the preface, Mr. Stevens extends the hope that his book "may encourage the reader to acquire a greater understanding of a representative government whose freedom is wholly dependent upon constitutional rights."

The Library of Congress, departments of agriculture, interior, justice, commerce, and state; the Federal Trade Commission, Atomic Energy Commission – all these diversified departments are profiled in the book's 36 parts.

Illustrations are made up of more than 80 black and white photographs, including some unusual ones from the National Gallery of Art.

PROCUREMENT AND MATERIALS MANAGEMENT FOR HOSPITALS, *by Rex H. Gregor and Harold C. Mickey. Springfield, Ill., Charles C. Thomas, Publisher, 1960. 159 pp.*

The field of purchasing for hospitals is continually growing and becoming more complex. This small volume contains much material on the concrete problems of such purchasing.

After a brief resume of the ethics of the purchasing officer, the authors break the technical material down in true reference-book fashion. Some of the chapters deal with requests for quotations, inventory control, purchasing of fresh produce, and the purchase and care of surgical instruments.

The chapter headed "Equipping a New Hospital" is especially extensive, and contains a suggested list of surgical instruments to be considered. The list is divided into sections according to the type of surgery involved, so that the prospective buyer may choose only those pertinent to his situation.

MOTHER ALFRED AND THE DOCTORS MAYO, *by James P. Richardson. New York, Benzinger Brothers, Inc., 1959. $2.00. 177 pp.*

This book is one of a series of Banner Books published by Benzinger, specializing in the biographies of Catholics famous in the development of the nation.

Written primarily for the nine-to-teens group, the book is an inspiring one, telling of the founding of the famous St. Mary's Hospital, Rochester, Minn., the "clinic in the cornfields."

Mother Alfred's determination to build a hospital in Rochester began when that town was struck by a tornado, and the local hotel lobby became an emergency ward and the convent facilities were pressed into service as a hospital.

The mutual influence of the nun and the non-Catholic Mayos upon each other and upon the townspeople is a significant part of the story.

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The result of extensive research, engineering and over three year's testing in actual clinical usage, D. I. T. is perfected, proven equipment. Ideal treatment for relief of pain resulting from many complications in the area of the cervical spine. Intermittent action (about 4 cycles per minute) permits use of much greater traction than possible with fixed traction. Excellent results are reported!

easy to use, inexpensive

D. I. T. is used under a variety of conditions for cervical, and pelvic traction. Easy to use with convenient D. I. T. Stand (roll away for storage) or with wall brackets. Operates on standard 110-120 volt A.C. outlet. Regulating dial sets traction pull. Handy "on-off" switch can be given to patient for greater feeling of security. Write for brochure!

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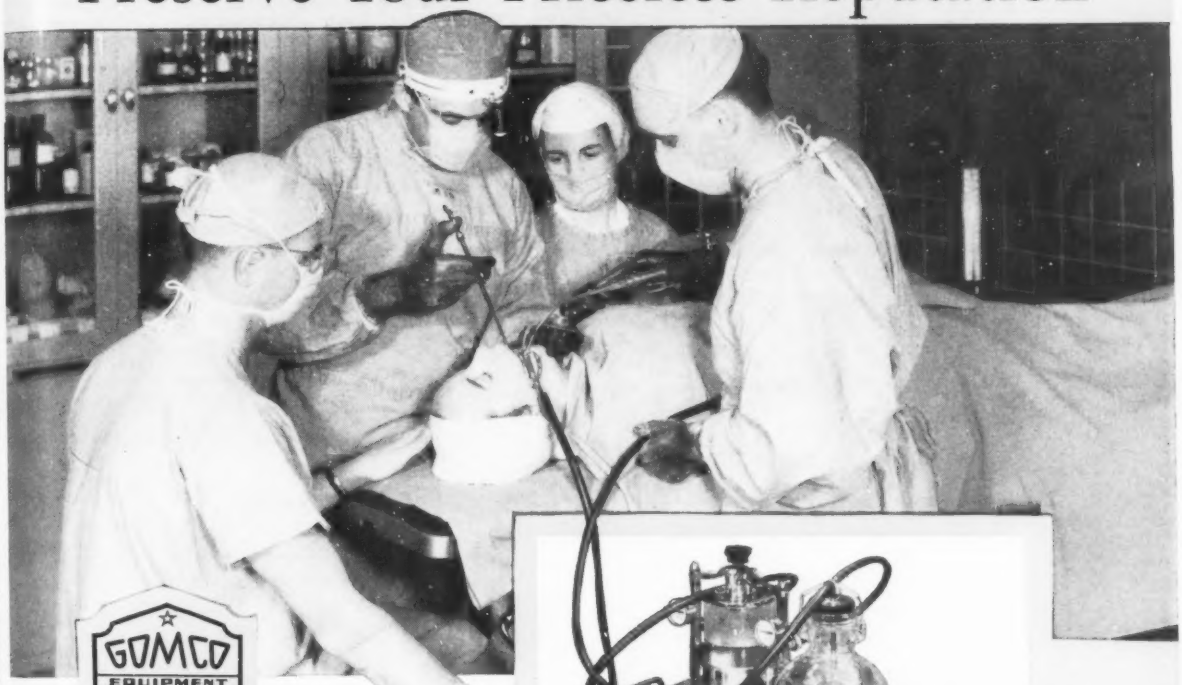
Since 1895 • The Standard of Quality

This Modern Equipment Helps Preserve Your Priceless Reputation



Gomco No. 927 Explosion-Proof Suction and Ether Cabinet ..choice of surgeries where the finest facilities are demanded.

For many years Gomco equipment has proved a valued ally to surgeons, nurses and staff in achieving the successful results that build reputation in the medical community.

An outstanding example is the Gomco No. 927 Explosion-Proof Hospital Unit for Suction and Ether Service. This double pump cabinet model offers the ultimate in safety. Quietly and dependably, it provides accurately-controlled ether-flow and precision-regulated suction.

Gomco Aerovent® overflow protection—automatically prevents flooding of the suction bottle, thus protecting the pump from damage.

Standard equipment of the 927 includes ether hook, suction tube, conductive rubber tubing and explosion-proof electrical connections.

Your Gomco Dealer will gladly demonstrate the 927, or any of the other models in the wide and varied line of fine, reliable, easy-to-operate Gomco equipment. Contact him today.

GOMCO SURGICAL MANUFACTURING CORP.

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150 East 42nd Street, New York 17, N. Y.

For further information see postcard opposite page 134.

At left: Joel Walker, (center) administrator, Barre City Hospital, elected president of the Vermont Hospital Association at its annual meeting, Oct. 13 and 14, Hotel Vermont, Burlington, receives congratulations from fellow officers, l. to r., Frederick A. Hale, controller, Mary Fletcher Hospital, Burlington, treasurer; Ralph H. Ross, president, board of trustees, Brightlook Hospital, St. Johnsbury, retiring president; Leslie Morse, administrator, Gifford Memorial Hospital, Randolph, president-elect, and Thomas Hennessey, administrator, Springfield Hospital, secretary.

At right: New officers of the Oregon Association of Hospitals, elected at its annual meeting, Oct. 16-18, at the Gearhart Hotel, Gearhart, are l. to r., Selmer O. Kivle, administrator, The Good Shepherd Hospital, Hermiston, president-elect; P. D. Fleissner, administrator, McKenzie-Willamette Memorial Hospital, Springfield, secretary-treasurer; Sister Marie de Pazzi, administrator, Sacred Heart General Hospital, Eugene, vice-president, and E. E. Bietz, administrator, Portland Sanitarium and Hospital, president.

Personally Speaking

Edythe L. Alexander – has been named director of nursing, Manhattan Eye, Ear and Throat Hospital, New York City, succeeding **Hazel Emmett,** who has retired.

Sister M. Altissima–has been appointed administrator of the new Holy Family Hospital, Des Plaines, Ill.

Marquerite C. Butler–has been appointed administrator and **Harold Harmer,** business manager, at Payson City (Utah) Hospital.

James F. Carlin, M.D.–has been named medical director, Morningside Hospital, Portland, Ore., to succeed **John L. Haskins, M.D.** who has retired.

James Russell Clark–has been appointed administrator, Brookhaven Memorial Hospital, Patchogue, N.Y., succeeding **William A. Kozma** who resigned to accept a similar position in the new Peninsula General Hospital, Queens, N.Y.

Wilbert Day–has been named administrator, Utah Permanente Hospital, Dragerton, Utah, succeeding **Richard Steele,** who recently entered medical school at the University of Denver, Denver, Colo.

Thelma Dollar, R.N.–has resigned as administrator, South Sunflower County Hospital, Indianola, Miss., and is succeeded by **Mrs. Ruth V. Kastorff, R.N.,** formerly anesthetist for the hospital.

Herbert J. Erwin, M.D.–has been named acting medical director, Homer G. Phillips Hospital, St. Louis, Mo., succeeding **William H. Sinkler, M.D.,** who died September 22.

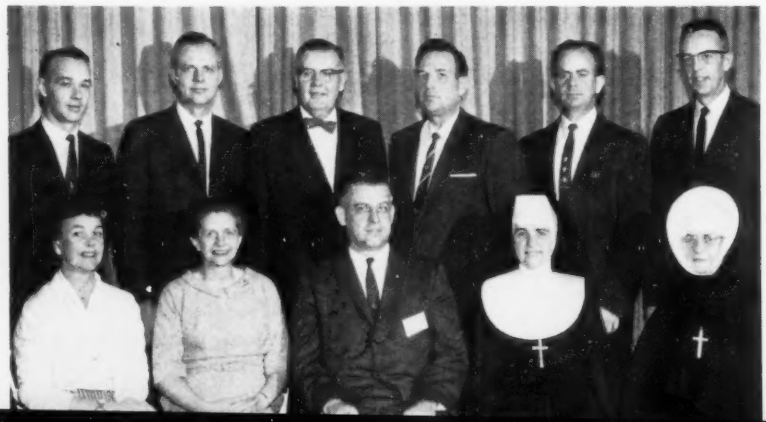
Sister Mary Georgett–is new administrator, St. James Hospital, Chicago Heights, Ill. Before this appointment she was assistant administrator.

Mrs. Lula Owl Gloyne, R.N. – has retired as company nurse for the outdoor drama "Unto These Hills," given each year at Cherokee, N. C. Mrs. Gloyne, a Cherokee Indian, received her training at Chestnut Hill Hospital, Philadelphia. Prior to her eight years as company nurse, she had done mission work among the Sioux Indians, and had been a school and field nurse.

Mrs. Ann Leggett Sims will succeed Mrs. Gloyne.

Bruce Ivy, Jr., M.D. – has been named director, Louisiana State University Student Hospital, Baton Rouge, La., succeeding **Eula W. Palmer, M.D.,** who continues on

Below: The Washington State Hospital Association's board of trustees for 1960-61 held its first meeting at the close of the annual convention held Oct. 19-20 at the Davenport Hotel, Spokane. Seated, l. to r., are Mrs. Leonore Eckhardt, administrator, Adams County Memorial Hospital, Ritzville, first vice-president; Alice W. Sandstrom, Children's Orthopedic Hospital, Seattle, treasurer; William E. Murray, administrator, Olympic Memorial Hospital, Port Angelus, president; Sister Francis Xavier, administrator, St. Anthony's Hospital, Wenatchee, second vice-president, and Mother Brendan, administrator, St. Ignatius Hospital, Colfax, trustee. Standing, l. to r., are Rodney Gannon, administrator, Samaritan Hospital, Moses Lake, third vice-president; Donald A. Faber, associate administrator, Virginia Mason Hospital, Seattle, trustee; Robert F. Brown, M.D., director, The Doctors Hospital, Seattle, president-elect; L. D. McIntyre, administrator, Prosser Memorial Hospital and Valley (Sunnyside) Memorial Hospital, past president; Roy M. Ecker, administrator, Deaconess Hospital, Spokane, trustee; Willis E. Parr, administrator, Skagit Valley Hospital, Mount Vernon, trustee, and Walter L. Huber, administrator, Tacoma General Hospital, trustee.



the staff as assistant director and full-time physician.

Claude L. Lollar, Jr.—has resumed his position as administrator, Field Memorial Community Hospital, Centreville, Miss., after a leave of absence to secure a master's degree in hospital administration from the University of Chicago. **Mrs. Elizabeth C. Ford,** acting administrator during Mr. Lollar's absence, has resigned in order to complete academic work in business administration.

Sister Albert Mary Rebel—has been appointed administrator, Daniel Freeman Memorial Hospital, Inglewood, Calif., and **Sister Eleanore Francis,** director of nurses.

John R. Reedy – has been named administrator, Stone County Hospital, Wiggins, Miss., succeeding **Curtis N. Steele,** who resigned to become administrator, Geneva County General Hospital, Geneva, Ala. Mr. Reedy was formerly assistant administrator, Forrest General Hospital, Hattiesburg, Miss.

William A. Kozma – has been named administrator of the new Peninsula General Hospital, Rockaway, Queens, N.Y. He was formerly administrator, Brookhaven Memorial Hospital, Long Island, N.Y.

Virgil W. Nelson – has been appointed executive director, North Shore Hospital, Winnetka, Ill., following the death of **Laurence B. Hutson,** former director. Mr. Nelson was formerly executive director, Lutheran General and Deaconess Hospitals, Chicago.

Nicolas T. Redeye – has been named administrator, Carbon Hos-

(Continued on next page)

Reduce bedfalls!

by equipping all beds with

Hill-Rom Safety Sides

Records show that approximately 65% of all hospital accidents occur in the patient's room or ward—within 10 feet of the bed. In one study of 614 cases, 46% of the accidents resulted from a fall out of bed.

Many of these bedfall accidents happen in one of two ways: 1. When the patient awakens at night, forgets he is in a hospital bed, and misjudges the distance to the floor. 2. When a patient attempts to get out of bed without help, and has nothing to support himself.

Hill-Rom Safety Sides serve to prevent or minimize both of these types of accidents. If the patient tosses and turns in bed, Safety Sides will caution him that he is in danger of falling. If he continues to roll he will be caught at hip level and will come out of bed with feet to the floor. When a patient first tries to get out of bed without help he instinctively grasps the Safety Side to support himself.

Hill-Rom Safety Sides will fit any bed—without the need for shims or other adjusting device.

For complete information on Safety Sides, send for **Instruction Manual No. 1,** by Alice L. Price, R.N., M.A., Nurse Consultant for Hill-Rom and author of several leading textbooks on Nursing.

HILL-ROM COMPANY, INC. • Batesville, Indiana

pital, Price, Utah. He was formerly administrator, Public Health Service Indian Hospital, Albuquerque, N. Mex.

Kenneth J. Shouldice – assistant professor, graduate program in hospital administration, State University of Iowa, has been appointed administrator, Chippewa County War Memorial Hospital, Sault Ste. Marie, Mich.

E. D. Singleton—has been appointed administrator, Masonite Hospital, Laurel, Miss., succeeding **G. E. Holder, M.D.**, who will retain his posts of chief medical officer and surgeon. Mr. Singleton was formerly assistant administrator, Methodist Hospital, Hattiesburg, Miss.

Mrs. Olivia Ullman – is retiring from the position of executive housekeeper, Aultman Hospital, Canton, Ohio; a post she has held since 1951. **Mrs. Claire L. Montgomery** has been appointed to act as executive housekeeper on a temporary basis.

Paul R. Whitney – has been named controller, Geisinger Memorial Hospital and Foss Clinic, Danville, Pa. He was formerly an accounting executive with the Ford Motor Co. international division. He succeeds **Andrew Crill,** who resigned.

David J. Vail, M.D. – has been named medical service director, Minnesota department of public welfare.

New Officers

Elected president of the Hospital Association of Rhode Island during its annual meeting Oct. 4 at the Sheraton-Biltmore Hotel, Providence, superintendent J. Dewey Lutes, Woonsocket Hospital, is shown (r.) receiving congratulations from retiring president, Rev. Stephen K. Callahan, secretary to the Bishop for hospitals, Catholic diocese of Providence. William J. Sullivan, M.D., manager, VA Hospital, Providence, was elected vice-president and Frederick M. Hovey, assistant director, Roger Williams General Hospital, was re-elected treasurer.

Sister Mary Assunta—was installed as the first woman president of the Colorado Hospital Association at its annual meeting in Estes Park in September. Sister Assunta is associate administrator, Penrose Hospital, Colorado Springs. Other officers elected were **Milton Speicher,** Wray Community Hospital, Wray, president-elect; **Robert L. Denholn, Colorado General Hospital,** Denver, vice-president, and **Walter Dubach,** Children's Hospital, Denver, treasurer.

Grant C. Burgon – administrator, Idaho Falls Hospital, was elevated to the office of president, Idaho Hospital Association, at its annual

(*Continued on page* 126)

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to soothe, protect,
lubricate, and stimulate healing in

rash • chafing • irritations
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the pioneer external cod liver oil therapy for care of the skin in every member of the family

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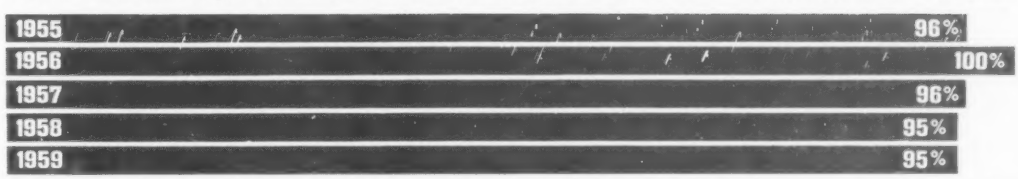
CHLOROMYCETIN®

chloramphenicol, Parke-Davis

IN VITRO SENSITIVITY OF COAGULASE-POSITIVE STAPHYLOCOCCI TO CHLOROMYCETIN FROM 1955 TO 1959*



These sensitivity tests were done by the disc method on 310 strains of coagulase-positive staphylococci. Strains were isolated from patients seen in the emergency room. It should be noted that among inpatients, resistant strains were considerably more prevalent.

*Adapted from Bauer, A. W.; Perry, D. M., & Kirby, W. M. M.: *J.A.M.A.* **173**:475, 1960.

10360

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapseals® of 250 mg., in bottles of 16 and 100.

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

PARKE-DAVIS

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(*Continued from page* 124)

meeting on Oct. 17 and 18 at the Elks Lodge in Boise. Others elected at the meeting were **William C. Hansen,** administrator, Mary Secor Hospital, Emmett, president-elect, and **Sister M. Alma Eugene,** comptroller, St. Alphonsus Hospital, Boise, secretary-treasurer. **John W. Hayman,** administrator, Caldwell Memorial Hospital, was elected the association's delegate to the AHA for a three-year period.

Reed B. Hogan—was elected president, Mississippi Hospital Association, at the MHA annual meeting held recently in Biloxi. He is administrator, Coahama County Hospital, Clarksdale. Other new officers are president-elect, **H. Dean Andrews,** administrator, Vicksburg Hospital, Vicksburg; treasurer, **Paul J. Pryor,** administrator, Mississippi Baptist Hospital, Jackson, and board members, **Reuben S. Johnson,** administrator, Anderson Infirmary, Meridian, and **E. Bruce Sledge,** administrator, Greenwood Leflore Hospital, Greenwood.

Sister Mary Margaret—administrator, St. Benedict's Hospital, Ogden, Utah, was elected president of the Utah State Hospital Association at its annual meeting in Salt Lake City. Named president-elect was **Vernon L. Harris,** administrator, University of Utah Medical Center; treasurer, **John R. Jeffries,** administrator, Primary Children's Hospital Jesus Christ of Latter-Day Saints, Salt Lake City, and trustee, **Clifford McKinney,** administrator, Sanpete LDS Hospital, Sanpete.

Wilbur C. McLin — Community Hospital, Indianapolis, was elected president, Indiana Hospital Association, at its recent annual convention for the 1960-61 term. Other new officers are **Richard W. Trenkner,** Memorial Hospital, South Bend, president-elect; **Jack A. L. Hahn,** Methodist Hospital, Indianapolis vice-president, and **Edmund J. Shea,** Indiana University Medical Center, Indianapolis, treasurer.

VA Appointments

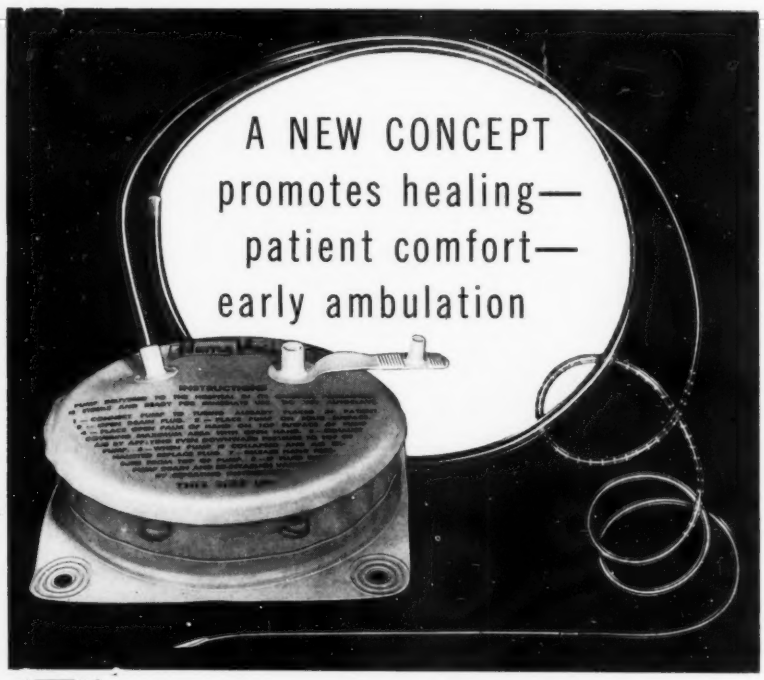
James L. Benepe, Jr., M.D.—has been appointed director, professional services, Sheridan (Wyo.) Veterans Administration Hospital, succeeding **G. A. Laxson**, who was transferred to Palo Alto, Calif.

Leon Ross, M.D. — has been appointed director, VA hospital, Ann Arbor, Mich. He was formerly director of the VA hospital at Brecksville, Ohio.

Deaths

David I. Bassett, M.D.—62, died Sept. 24. He was director of otolaryngology, Morrisania Hospital, Bronx, N.Y.

Robert R. McLaurin, M.D.—owner and director of the Laurel (Miss.) General Hospital, died recently at the age of 59.



HemoVac® provides positive and uninterrupted drainage starting immediately from time of closing incision. Keeps wound flat and free of inflammation, stitch cutting or irritation. Wound surface remains dry — dressing remains dry — sheets remain clean. Evacuator completely self-contained. All HemoVac parts are Low Cost—Disposable.

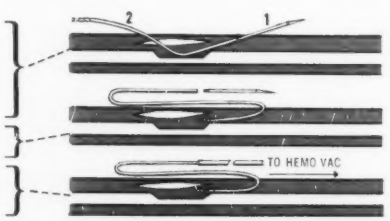
Effective for all wounds, especially *Deep Tissue Abcesses,* Osteomyelitis, Large Surgical Incisions.

Efficient for closed circulation of Anti-Biotics.

Introduce stainless steel malleable needle (1) through incision and obliquely out through soft tissue, drawing attached perforated vinyl tubing (2) into position.

Detach needle. Anchor tubing to skin.

Close wound and attach tubing to HemoVac evacuator.



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LOOK FOR THE TRADEMARK ®

New Alvodine ethanesulfonate

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Analgesic potency as great as morphine without drowsiness or hypnosis*

Alvodine, a new and powerful narcotic analgesic, relieves pain as effectively as morphine, yet is much safer because it is free from the high incidence and severity of morphine's side effects. Alvodine is effective *orally* as well as parenterally. Alvodine causes almost no sedation, drowsiness or euphoria. Respiratory and circulatory depression are rare with customary doses; nausea and vomiting are uncommon. Constipation has not been reported.

Preferred agent for specific situations

Alvodine is especially well suited for *postoperative analgesia* because it permits most patients to remain alert and at the same time free from pain. The risk of postoperative pulmonary hypostasis and venous stagnation is decreased because the use of Alvodine allows patients to be mobilized sooner.

Alvodine is ideal for *ambulatory* and *semiambulatory patients* who are in need of strong analgesia. Patients with cancer remain alert and can often carry on their normal daily activities when freed of pain by *oral* doses of Alvodine.

Dosage: Orally, from 25 to 50 mg. every four to six hours as required. By subcutaneous or intramuscular injection, from 10 to 20 mg. every four hours as required.

How Supplied: Alvodine tablets, 50 mg., scored. Alvodine ampuls, 1 cc., containing 20 mg. per cc. *Narcotic Blank Required.*

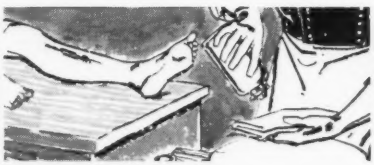
Winthrop LABORATORIES
New York 18, N. Y.

Write for Alvodine brochure containing detailed information on clinical experience, addiction liability, side effects and precautions.

*In more than 90% of patients.

From Curity—A new step forward in the continuing

CLEANLINESS AND ISOLATION, since the middle of the 19th century, have proved to be cardinal principles in the treatment of wounds.



ANTISEPSIS brought a surgical dressing saturated with an agent that would combat wound contaminants.

THE DRY STERILE DRESSING proved more versatile, more convenient, less traumatic . . . the concept of asepsis was born.

Now-a pre-pack that delivers

New **S-E*Pack** opens in one simple motion.
Keeps dressing sterile from package to patient
—never touches torn, unsterile edges.

For the first time in aseptic technique, a packaged dressing approaches the ideal. It is known as the S-E Pack.

Examine one soon. You'll find its value is immediate—and immeasurable—in the fight against staph infections.

Saves time, labor and money

With this surprisingly simple wrap, one motion of the hand opens the package and presents a completely aseptic gauze or cover sponge. It touches neither hands nor unsterile surfaces, not even a torn edge of the package. No strings, no scissors. You merely pull a tab.

Another valuable benefit of the S-E Pack is economy. The savings are conspicuous after only a few days' use. Time is gained, labor is spared, fewer sponges are wasted.

For true asepsis as well as significant savings, see your Curity representative.

You simply peel back one flap and the sponge is ready. You have complete control. Dressing is tucked in pocket . . . easy to hold, easy to reach. And one hand is still free. Curity now provides Cover sponges in 4" x 3" and 4" x 4", and a gauze sponge in 4" x 4" in the new S-E Pack.

Curity®

S-E PACK

*T. M.

THE KENDALL COMPANY
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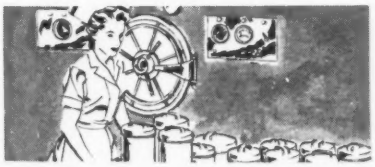
DIVISION

search for better aseptic techniques

STEAM STERILIZERS, while enlarging the range of materials which could be sterilized, brought new speed and needed dependability.

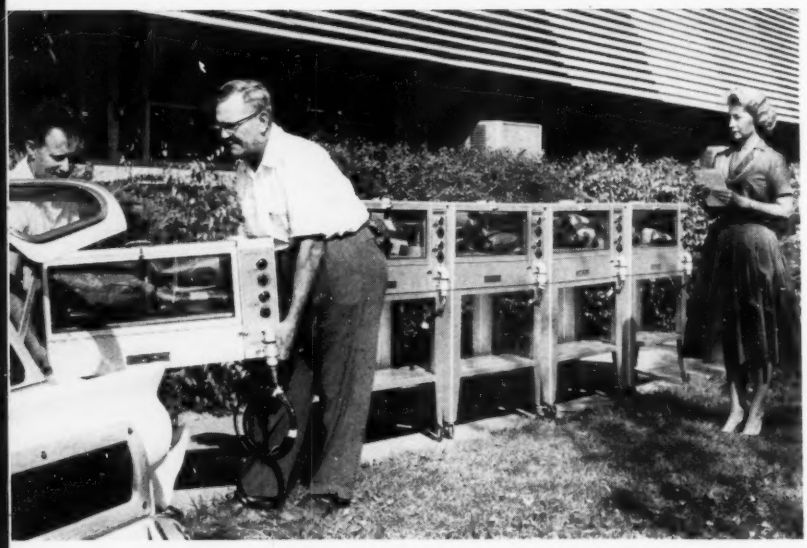


THE CANISTER further helped to facilitate the transportation, storage and dispensing of sterilized dressings.

THE PRE-WRAPPED, PRE-STERILIZED DRESSING improved technique and convenience, saving time and labor.

a totally sterile dressing

For further information see postcard opposite page 134.



Preparing for the eventuality of a multiple birth reported to them recently by a St. Louis, Mo., hospital, the A. S. Aloe company rushed to meet the stork's deadline with this delivery of five infant incubators. In 1934, Aloe supplied the incubators for the famous Dionne quintuplets. A. S. Aloe is a division of the Brunswick Corporation.

TRADE TOPICS . . .

Recent Changes At Beckman Instruments

William S. Bierbaum has been named product line manager, scientific and process instruments division, Beckman Instruments, and James E. Tebay has been appointed training manager.

Harry H. Bauer is new midwestern regional sales manager; Donald G. Drew, process sales engineer, northwest U. S. and western Canada; Michael K. Lenihan, Harold J. Peper, Robert B. Sankey and Donn Thomson, process sales engineers, eastern region, and Robert L. Sinek, Herman L. Steudel and Frederick M. Teetzel, process sales engineers, midwestern region.

Posts Filled At Shampaine Industries

John B. Dunne has been appointed manager, technical therapeutic products, at Shampaine Industries.

James Chagnon, formerly associated with Latin American firms, has joined Shampaine as sales representative, institutional and professional divisions, in the St. Louis, Mo., area.

NSES, Hazleton Affiliate Form New Corporation

Pooling the talents of the west coast affiliate of Hazleton Laboratories, Inc., and Nuclear Science and Engineering Corp., Hazleton-Nuclear Science Corp. has been formed in Palo Alto, Calif. Harry L. Browne has been appointed president of the new firm, Dr. Ralph W. Fogleman, vice president, and Eugene Zuckert, chairman of the board. Dr. Hazleton is founder, president and chairman of the board of Hazleton Laboratories.

Dr. Norbert S. Domek has been appointed advanced scientist, department of biology and medicine, NSEC in Pittsburgh and Robert G. Gallagher, assistant manager.

Co-founder and Chairman Of Baxter Labs Dies

Ralph Falk, M.D., co-founder and chairman of the board of Baxter Laboratories, Inc., died on November 2. Dr. Falk, 76, who practiced surgery until recent years, was president of Baxter from its inception in 1931 until 1953, when he assumed the chairmanship.

Mead Johnson Names Staff Appointments

New associate director of the clinical research department at Mead Johnson & Co. is Richard J. Manner, M.D. Max D, Davis, M.D., and Paul A. Walter, M.D., have joined the firm as associate medical directors, nutritional and pharmaceutical division. Both were formerly practicing physicians.

News Items From Castle

Wilmot Castle Company's vice-president-sales, Frank L. Rice, has announced his retirement. Mr. Rice had spent more than 30 years selling in the hospital field and had joined Castle in 1937. While associated with the firm, he was instrumental in opening up export markets in every section of the world.

To fill the vacancy created by Mr. Rice's retirement, two executive positions were named: John C. Gable will be director of hospital sales and William K. Glen is sales manager.

In another appointment, John F. Carmody was named systems manager for Wilmot Castle.

Sterling Drug Announces New Appointments

Maurice L. Tainter, M.D., a vice-president of Sterling Drug Inc., has been appointed to the newly created post of vice-chairman, Sterling research board. He is succeeded in his former position as director of the Sterling-Winthrop Research Institute by C. M. Suter, M.D. Dr. Suter, who will also serve as a member of the Sterling research board, was formerly

(*Continued on page* 133)

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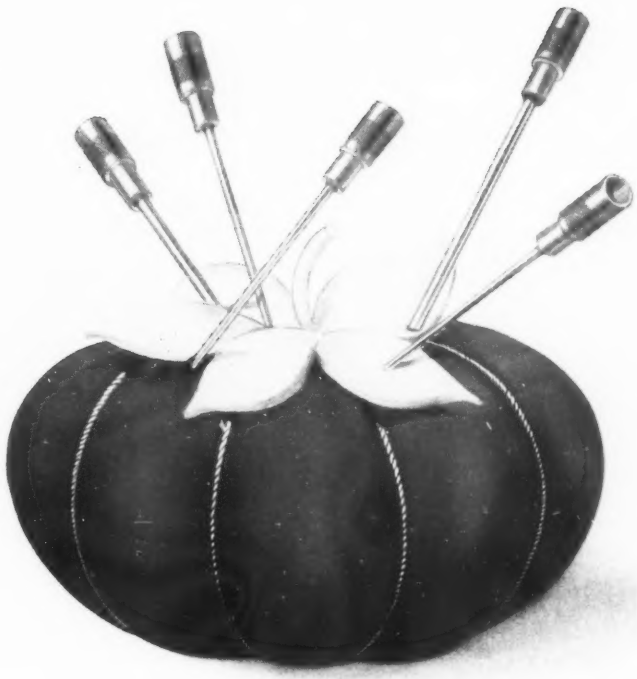
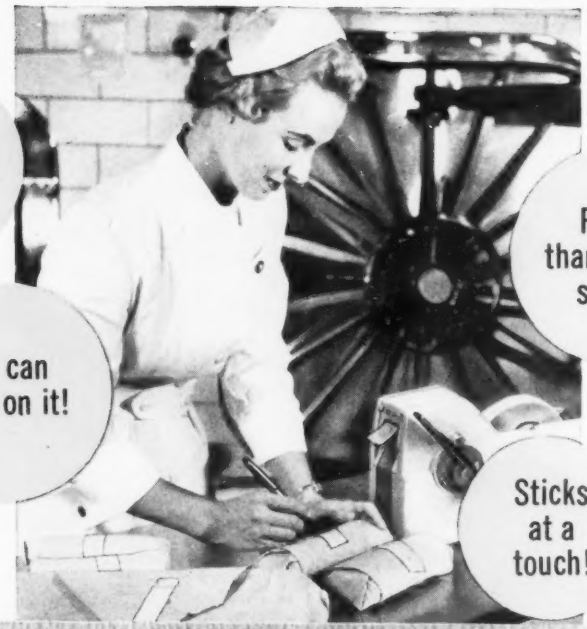


Take the needle out of the patient...

...and ensure optimum patient comfort during intravenous infusion, by use of the Bardic® Deseret Intracath®
This ingenious unit (sterile and ready for use) makes the venipuncture and places a soft, pliant catheter in the vein
... the needle is then withdrawn and becomes an adapter for any I.V. set • No rigid needle remains in the vein;
no armboard is needed • Most venous cutdowns are eliminated; scrubbing or gloving is not required
• As the Intracath may be left indwelling for several administrations, there is less trauma, minimized reaction,
and the need for repeated venipunctures is reduced. The Intracath is convenient and
time-saving for the hospital; safer, more comfortable for the patient.

C. R. BARD, INC. • SUMMIT, N. J.

The Bardic® Deseret Intracath® is available through your Hospital/Surgical Supply Dealer in 6" or 12" catheter lengths, with 14, 17 or 19 gauge needles. For complete information and detailed Procedure for Introduction, request Bard brochure CS-6



Holds firmly!

Faster than pins or string!

You can write on it!

Sticks at a touch!

Insist on dependable SCOTCH® BRAND HOSPITAL AUTOCLAVE TAPE NO. 222

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Dark lines tell at a glance pack has been autoclaved!

Peels off clean – no sticky residue!

Special inks cannot be accidentally activated by sunlight, radiator heat, dry air pocket in faulty autoclave!

Nothing on the outside of a bundle, of course, can guarantee sterility of the contents.

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...WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

(*Continued from page* 130)

chairman, department of chemistry, Northwestern University, Chicago.

Ross V. Sayers, M.D., has been named vice-president of the George A. Breon & Co. division of Sterling. He has been medical director of Breon and continues in that capacity.

News Items

Sterilon Corp. — has opened its new Canadian facilities at Niagara Falls, Ont., and commenced production operations.

* * *

James C. Hill — has been appointed a sales representative, Fischer & Porter Co.

* * *

Colgate-Palmolive Co. — has announced the start of construction of a research center adjacent to the Rutgers University science campus near New Brunswick, N. J.

Share your Christmas Joy

Help Others

Give to The Salvation Army

Coleman Instruments, Inc. — has completed the purchase of Delmar Scientific Laboratories of Chicago, which will be operated as a subsidiary. It is anticipated that a portion of Delmar production will be utilized by Coleman in its manufacturing processes.

* * *

Richard K. Murison — has been appointed manager of G. D. Searle do Brasil, a unit in the international organization of G. D. Searle & Co.

* * *

Walter F. Tummel — has been named managing director, Schuco International Hamburg, a firm which represents such American manufacturers as Orthopedic Frame Co., International Equipment Co., Becton, Dickinson & Co., Coleman Instruments, Inc., and Bausch & Lomb Optical Co.

* * *

Marian J. Sokol — has been named home economist for Fairmont Foods Co. She was formerly dietitian for the Children's Hospital, Milwaukee, Wis.

* * *

Joseph V. Vermillion — has been promoted to the office of vice-president, manufacturing, Gerson Stewart Corp. He was formerly director of manufacturing for the firm.

* * *

Simmons Co. — has acquired the AMP all-electric hospital bed manufactured by American Metal Products. The bed will be marketed under the name Multi-Matic.

* * *

The A. O. Smith Corp. — plans to build an advanced research center at Middleton, Wisc., to open by mid-1961. **Lee Zoeckler** has been appointed manager of the firm's Permaglas division in Chicago, where he is also sales supervisor.

Cutter Laboratories has announced the appointment of **Louis Jurado**, creative supervisor for Cutter hospital products domestically, to the position of advertising and sales promotion manager for the company's international division.

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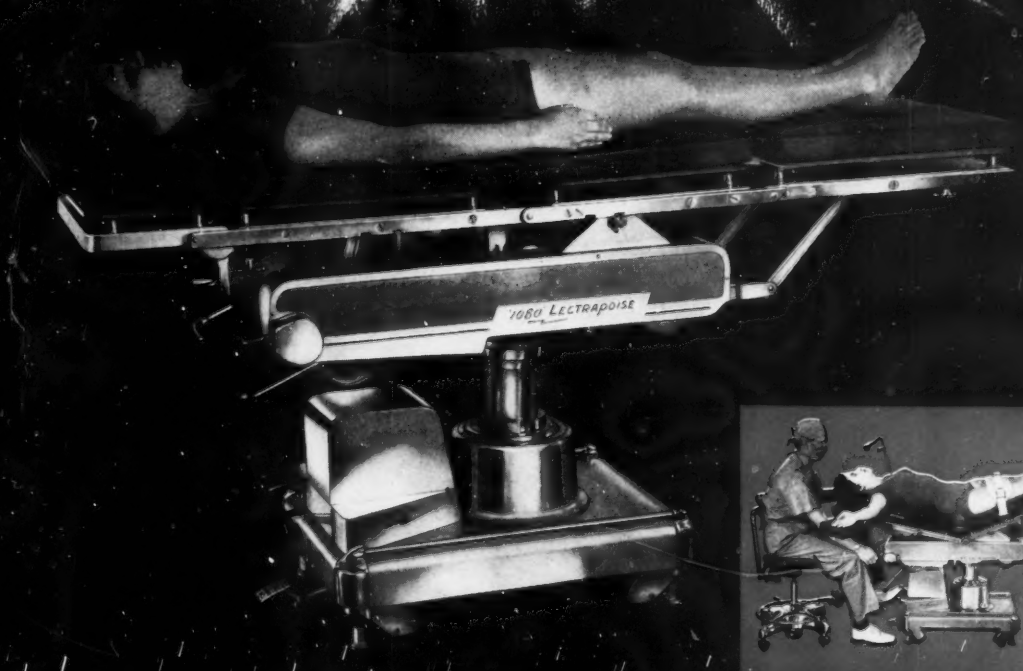
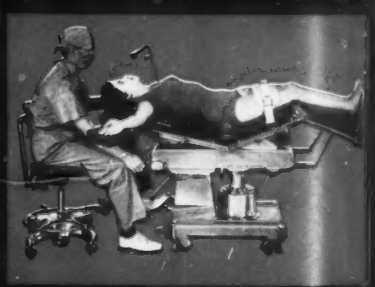
THE DRAMATIC—ALL POWER

Lectrapoise

OPERATING TABLE

with INSTANT POWER-RESPONSE





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In every sense Amsco's remarkable new "Lectrapoise" Operating Table answers the surgeon's need for smooth power-positioning . . . ultimate in surgical convenience.

A number of new engineering features set the "Lectrapoise" above all other operating tables . . . "power-response" positioning . . . quick-grip mattress pad . . . full length X-ray top . . . new clamp-on legholder sockets . . . emergency positioning . . . and complete standard accessories.

Every surgeon, anesthesiologist and every hospital will appreciate the significantly finer qualities of the "Lectrapoise." For once they power this compact table through its surgical postures, there can be no substitute.

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530. Toothbrush holder
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C-570. Disposable syringe
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C-572. Hospital bed
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C-574. Operating table.
C-575. Pressure bandage
C-576. Surgical nail
C-577. Spray disinfectant
C-578. Operating table
C-579. Cast ventilator
C-580. Otometer
C-581. Nebulizer
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*Bogash, R. C.; DeLa Chapelle, N.; Sowinski, R., and Downes, D.: Disposable Type Vials for Adding Medications to Large Volume Parenterals. Am. J. Hosp. Pharm. *17*:104 (Feb.) 1960.

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